

period greater than 96 hours without the required permits ... Oil Operators allowed hazardous waste to be stored for a period up to one year without the required permits ... Furthermore they mix numerous waste streams at the facility without the required permits..."

6. The LARWQCB has provided little information to BP regarding the operations at the OOI property. Publically available files recently obtained by BP at the Long Beach Health Department indicate the following (in addition to OOI operations information previously provided by BP to the LARWQCB):

- Sludge from sumps on the OOI operations was spread onto the northern OOI site.⁶ The excessive odors from this activity resulted in resident complaints. Measurements of ambient air by the Health Department recorded up to 50 ppmv volatile organic compounds (VOCs) in the neighborhood.⁷ Removal of sludge from the sump located near Brycon-MW1 was reportedly spread on the northern OOI site (i.e., north of I-405).

BP requests that the LARWQCB fully investigate the history, uses, and contributions of OOI operations to Site Impacts and provide all available information to BP for use in preparation of a Conceptual Site Model and associated source identification required in the tentative CAO.

7.d. Significant potential sources of benzene and other contaminants exist in the vicinity of 712 Baker Street other than the BP pipelines⁸

- Seven pipelines owned by others have been identified along Golden Avenue and Baker Street. The LARWQCB has not provided information related to the uses, history of operation, release and repair history, etc., for these lines. Also, many other lines that could provide conduits for plume migration traverse the OOI site from the area north of Baker Street along Golden Avenue.
- The LARWQCB has not considered the potential contribution of lines beneath Baker Street, indicating that the lines are "away from the primary area of concern along Golden Avenue." OOI reports present data showing detectable concentrations of dissolved phase petroleum hydrocarbon compounds in water samples from the well MW-3, which is part of the OOI Site, as described in the tentative CAO. Well MW-3 is located approximately 50 feet from Baker Street.
- In addition, substantial evidence from the California Environmental soil vapor study⁹ and other historical and forensics analysis demonstrates that deep impacts along Golden Avenue extend north of Baker Street and that the greatest surface impacts at the site are found in the vicinity of Baker Street. Methane data throughout OOI indicate contaminants likely originated on OOI property, with the highest concentrations north of Baker Street.¹⁰

⁶ Statewide Investors, Inc. July 1986. *Site Characterization Study*, Long Beach.

⁷ Long Beach Department of Health and Human Services files, Background Readings – with OVA, Excavation Area – not covered with clean soil cover or foam, 10/02/89.

⁸ BP, December 4, 2012. p.7

⁹ Brycon, September 30, 2011. Report on Additional Site Characterization Oil Operators, Inc. 712 Baker Street Long Beach, CA SCP Case No. 0093, SCPID No. 2044M00. Prepared for Oil Operators, Inc. Newport Beach, CA.

¹⁰ Brycon, September 30, 2011.

7.e.i. Soil vapor concentrations increase with depth, including within AOC A, which suggests a deeper, separate source for the hydrocarbon impacts beneath the pipelines, and not a current shallow source such as the pipelines.¹¹

7.e.ii. AOC A is not located near two recent pipeline repair locations. The northerly asphalt patch is located approximately 250 feet north of 3742 Countryside Lane. Furthermore, the asphalt patches are not indicative of a pipeline release, and as previously documented, no "repairs" were made to ARCO lines. The patches are a result of preventive maintenance due to testing anomalies. In addition, field log records show no evidence of leaks during the excavations for maintenance.¹²

7.f.i.1. BP did not make the stated claim that subsurface samples lacked iso-octane and therefore did not originate from gasoline, as iterated in BP's December 4, 2012 letter. BP's previous statements regarding the lack of iso-octane were in reference to the soil vapor sample from VES-A, not the LNAPL sample¹³ collected from well Brycon-MW1 (in Area AOC B).

7.f.iii. The statement that the LNAPL sample lacked evidence of heavier hydrocarbons overstates Zymax's conclusions. Chemical fingerprint data do not show a consistent forensic signature, which would be expected if the only source of contaminants was a pipeline release. In addition, Zymax did not analyze the heavier carbon range and, therefore, does not have the data to draw this conclusion. Analyses were limited to C3-C10 and oxygenates. Per Zymax, "There is not evidence of any heavier petroleum products in the sample. This could be confirmed by analysis in the C3-C44 carbon range."

7.f.iv. It appears that the LARWQCB is using benzene as an indicator chemical for gasoline-sourced contamination. However, it is documented in several reports, including those footnoted below, that OOI influent¹⁴ and effluent¹⁵ contained benzene.

7.g. The leaded gasoline scavenger, 1,2-Dichloroethane (1,2-DCA), has not been detected in any sample locations except those on the OOI property. 1,2-DCA was not detected in any soil vapor or soil samples above 30 feet below ground surface (bgs). Higher concentrations of 1,2-DCA in groundwater were detected on the northern portion of the OOI property (i.e., north of Baker Street) away from the ARCO pipelines.¹⁶

7.h. Benzene has been detected in groundwater on the OOI property, with concentrations increasing significantly along its eastern boundary after a shift in groundwater flow direction toward the southeast in 2005. This could suggest a source on the OOI property, not a source beneath Golden Avenue. In addition, iso-concentration maps of benzene and other compounds produced by Brycon are far-reaching and misleading (see for example Figure 5 of the October 15, 2012 Brycon quarterly groundwater monitoring letter).¹⁷

¹¹ BP, December 4, 2012, p. 10.

¹² BP, December 4, 2012, p. 5.

¹³ BP, December 4, 2012 p. 12.

¹⁴ Jack K. Bryant and Associates, Inc., August 11, 1992. *Investigation of Groundwater/ Soil Contamination at the Oil Operators South Site, 712 Baker Street, Long Beach, California*.

¹⁵ Oil Operators, Inc., 1993. Letter from Sheri Johnson to Diana Shinn, City of Long Beach Health Department, October 11, referencing Certified Testing Laboratories, Inc., 1993, laboratory report for Oil Operators, Inc. effluent wastewater sample collected October 1.

¹⁶ BP, December 4, 2012, p. 12-13.

¹⁷ Brycon, October 15, 2012. *September 2012 – Quarterly Groundwater Monitoring at the Oil Operators Property, 712 West Baker Street, Long Beach, California*.

In the Brycon 2006 October Groundwater Monitoring Report, Brycon noted "The concentration of benzene increased in ESE-MW1 relative to the April 2006 sampling event (from 1,800 ug/l to 2,600 ug/l). This is a fairly significant increase. In April 2005, the benzene level in this well was 1,400 ug/l and in October 2005, it was only 19 ug/l. The first large increase observed during recent monitoring events was in April 2005, which represents the first reported time that the change in gradient and flow direction from northwesterly to northeasterly was observed. The benzene levels measured in ESE-MW1 appear to be related to water flow direction and elevation. In this well, several other VOCs also increased in concentration during the recent (October 2006) monitoring event. These included 1,2-DCA, ethylbenzene, toluene and xylenes. In Emcon-MW3 the VOCs did not change very significantly however, more VOCs were detected than in April 2006."

Also, in their 2006 report conclusions, Brycon noted the following: "This northeasterly flow direction may be responsible for the noticeable increase in benzene levels detected in Well ESE-MW1 in three out of the four monitoring events conducted since April 2005. ... The increase in benzene levels observed in Well ESE-MW1 seems to be related to the change in groundwater flow direction in which ESE-MW1 now has a downgradient component relative to Basin 1. Although soil and sludge in Basin 1 was blended to facilitate bioremediation in recent years, seepage and partitioning of substances present in the Basin 1 sludges may have occurred over numerous years in the past, impacting nearby shallow groundwater."¹⁸

Further, the data provided to BP by the LARWQCB via reports uploaded to GeoTracker are insufficient to allow depictions of chemical iso-concentration lines east of the OOI property. The three wells along the eastern side of OOI property are each situated approximately 500 feet apart, and there are no wells to the east that would allow depiction of the contouring shown. Prior Brycon maps, which included more data, show distinct areas of contamination rather than a single continuous plume.¹⁹ Additionally, gasoline-range hydrocarbons have been detected on OOI's former northerly-most parcel (i.e., a current driving range located north of I-405) in sump sludge 30 feet bgs, further indicating the potential contribution of gasoline compounds by OOI operations.²⁰

9.a. CHHSLs for vapor screening are applied in the top 5 feet – the 390 ug/L benzene vapor result was detected at a depth of 20 feet bgs. This is an incorrect and misleading application of the state standards and the Cal EPA January 2005 guidance.

10. No reference was made to the December 4, 2012 letter or the December 5, 2012 meeting and BP's anticipated response from the LARWQCB to discussions held during that meeting.

- The LARWQCB states that "To date, the Regional Board has not received a revised work plan from BP." BP had not refused to submit a work plan but understood that the LARWQCB would respond to the technical and legal bases presented at the December 5, 2012 meeting.

21. "... are or will pose a potential human health threat to occupants of the nearby Wrigley Heights residents through direct contact exposure to contaminated soil and/or groundwater ... "

Groundwater is located 30 to 50 feet bgs. Direct contact by residents is not currently a viable risk pathway. In addition, there have been no shallow soil impacts identified above 10 feet bgs in

¹⁸ Brycon, October 20, 2006. *October 2006 Semi-Annual Groundwater Monitoring at the Oil Operators Property, 712 Baker Street, Long Beach, California.*

¹⁹ Brycon, January 15, 2011. *December 2011 – Quarterly Groundwater Monitoring at the Oil Operators [sic] Property, 712 West Baker Street, Long Beach, California.*

²⁰ LFR, Inc., April 4, 2006. *Characterization Data Report, former Oil Operators North Site, 3701 Pacific Place, Long Beach, Prepared for CRG Properties.*

Investigations by others along Golden Avenue. There is no currently defined risk due to direct contact with impacted soil along Golden Avenue.

Required Actions 3. "Completely delineate the extent of ... in soil, soil vapor, ... discharged at or from the Site." BP requests "the Site" be changed to "ARCO pipelines". ARCO has no liability for impacts by others, such as OOI and other pipelines in the Site.

Exhibit D – Schedule items

- BP requests a sequence revision: A human health risk assessment will be conducted following implementation of the Master Work Plan and evaluation of the data associated with the investigation required in the tentative CAO.
- BP requests an additional sequence revision: A conceptual site model will be prepared following implementation of the Master Work Plan and evaluation of the data associated with the investigation required in the tentative CAO.
- Groundwater monitoring – Monitoring wells to be sampled per this requirement will be identified in the Work Plan. ARCO will not be responsible for reporting of data collected by others (e.g., reporting on the monitoring period for January through June 2013 or thereafter depending upon the timing of issuance of the final CAO).
- IRAP – Due to the egregious errors in Brycon's 2013 vapor extraction system monitoring report²¹ recently uploaded to Geotracker, BP considers the basis for the system and its operation to be suspect. The errors overstate the benzene recovery, by a factor of at least several thousands.²² This is part of a pattern of errors in Brycon reports, as indicated to the LARWQCB during discussions and meetings in 2012. Vadose zone data along Golden Avenue support the low levels of benzene recovered by the OOI vapor extraction system. Following implementation of the Master Work Plan and evaluation of the data associated with the investigation required in the tentative CAO, BP will prepare a RAP if the data and human health risk assessment confirm that one is necessary.
- The schedule timeline is unrealistic. A Master Work Plan will be submitted to the LARWQCB by BP within six weeks of the issuance of the Final CAO.

Legal Comments

The tentative CAO lacks a sufficient evidentiary basis that conforms to Water Code standards and recent case law. For the reasons set forth below, we urge the Board to rescind the Order and allow BP to conclude its response to the 13267 Order. Alternatively, we urge the Board to delay issuance of the order until BP obtains a State Board decision on the June 8, 2012 Petition.

- The tentative CAO repeats the evidentiary and legal flaws associated with the May 11, 2012 13267 Order. Water Code Section 13267 authorized the Regional Board to issue the 13267 Order to those who have discharged, or are suspected of having discharged, wastes. There was and continues to be a lack of evidence of that any BP line discharged gasoline in the vicinity of the Site. There is strong evidence showing BP has not caused or contributed to a release. BP has cooperated with every request and order from the LARWQCB thus far but would be forced again to petition the state board for review of any clean-up abatement order in this matter.

²¹ Brycon, April 15, 2013. *Quarterly Monitoring Report, Soil Vapor Extraction, Oil Operators Inc. 712 Baker Street, Long Beach, California.*

²² BP, May 24, 2013. Letter to LARWQCB, Mr. Pinaki Guha-Niyogi, Subject: *Oil Operators, Inc., April 15, 2013 Quarterly Monitoring Report, Soil Vapor Extraction.*

- A clean-up and abatement order may be issued only to a person "who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance." (Water Code § 13304.) Section 13304 liability attaches only where a party "took affirmative steps directed toward the improper discharge" of waste or has either directly spilled or released the contaminants into the environment or affirmatively and knowingly caused or permitted the contamination to migrate. *Redevelopment Agency of the City of Stockton v. BNSF Railway Co.*, 643 F.3d 668, 674-674, 678 (9th Cir. 2011) (applying the law of nuisance to Water Code 13304). Here, there is no evidence that a BP line in the vicinity of the Site "caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited."
- Based on the foregoing, the LARWQCB lacks a basis to name BP in a clean-up and abatement order.
- Further, Resolution 92-49 requires that the LARWQCB use the most cost-effective methods for detecting contamination or pollution and ensuring clean up. The draft CAO is not a cost-effective means for many of the same reasons described in the June 8, 2012 Petition. It imposes unreasonable costs on BP where the evidence supports that parties other than BP should bear those costs.
- In light of the foregoing, we urge the Board to rescind tentative CAO. Alternatively, we urge the Board to delay issuance of the order until BP obtains a State Board decision on the June 8, 2012 Petition.

EXHIBIT 3

LEGEND:

- HISTORICAL GROUNDWATER MONITORING WELL LOCATION
- VAPOR EXTRACTION SYSTEM WELL (CALIFORNIA ENVIRONMENTAL 2012)
- COI WELLSBORINGS (BRYCON 2010/2011)
- COI SOIL VAPOR PROBE (CALIFORNIA ENVIRONMENTAL, 2011)
- SOIL BAKING (AEMC, 1991)
- MANHOLE
- LOCATION OF PREVENTATIVE MAINTENANCE ON BP LINE 32 AT 46FT AND 39FT SOUTH OF BAKER STREET
- 12-INCH BP (USPL) 32 PIPELINE
- 8-INCH BP (USPL) 32 PIPELINE (ABANDONED)
- 8-INCH BP (USPL) 34 PIPELINE
- 8-INCH BP (USPL) 34 PIPELINE (ABANDONED)
- 8-INCH BP (USPL) 202 PIPELINE (ABANDONED)
- 8-INCH PLAINS PIPELINE
- 6-INCH PLAINS PIPELINE (ABANDONED)
- 4-INCH GENERAL EXPLORATION PIPELINE (ABANDONED)
- 8-INCH GETTY PIPELINE
- 8-INCH GETTY PIPELINE (ABANDONED)
- 8-INCH GOLDEN EAGLE PIPELINE
- 8-INCH GOLDEN EAGLE PIPELINE (ABANDONED)
- APPROXIMATE STORM PIPING
- 10-INCH UNION OIL PIPELINE
- 30-INCH UNION OIL PIPELINE (ABANDONED)
- 30-INCH WATER PIPELINE
- WATER PIPELINE (ABANDONED)
- 12-INCH OO WASTEWATER PIPELINE
- 24-INCH OO WASTEWATER PIPELINE
- 24-INCH OO STORM PIPELINE
- 30-INCH VCP L.A. COUNTY SEWER LINE (APPROXIMATE)
- 6 TO 8-INCH VCP SEWER LINE
- SUMP
- LARVOCB AREA OF CONCERN

NOTES:

- 1) INVOCB INFORMED BP THAT CRIMSON PIPELINE OWNS ONE ACTIVE CRUDE AND ONE ABANDONED CRUDE PIPELINE THAT ARE LOCATED NEAR THE NORTH-EAST CORNER OF THE OO SOUTHERN PROPERTY. THESE LINES ARE NOT DEPICTED ON THIS DRAWING.
- 2) PIPELINE INFORMATION SOURCES: CITY OF LONG BEACH AND ARC RECORDS

ABBREVIATIONS:

- FT FEET
- RWQOCB REGIONAL WATER QUALITY CONTROL BOARD
- USPL UNSATURATED ZONE SOLVENTS
- VCP VITRIFIED CLAY PIPE



INVESTIGATION WORK PLAN
NEAR 712 BAKER STREET
LONG BEACH, CALIFORNIA

INVESTIGATION AREAS
AOC B

PROJECT NO.	DRWN.	CHK.	DATE
0208191420	SM	MM	10/01/12

FIGURE 3



Aerial Photo Source: ESRI, Leibert, USDA FSA, USGS, AEC, Geology, Geomapping, Aerialimg, IGP - 2012

EXHIBIT 4



BP Pipelines (North America) Inc.

5905 Paramount Blvd.
Long Beach, CA 90805
Phone 562 728-2265
Fax 562 728-2760

July 11, 2012

Mr. Pinaki Guha-Niyogi
Case Manager
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street
Los Angeles, CA 90013

Subject: Requirement for Technical Report, Pursuant to California Water Code Section 13267
Order – Transmittal of Technical Report

Site/Case: Near 712 Baker Street
Long Beach, California

Dear Mr. Guha-Niyogi:

BP Pipelines (North America) Inc. (“BP”) is in receipt of the subject Regional Water Quality Control Board (“LARWQCB”) Order, dated May 11, 2012 (the “Order”). The LARWQCB provided an extension through July 11, 2012 for BP to respond to the Order. Last week on July 6, 2012, BP verbally requested an additional extension because more time was needed to review data received June 29, 2012. Although additional time was not granted, we determined with you that it would be appropriate to meet to review this new data. Please let us know what days are convenient for a meeting.

The Order pertains to an investigation “near 712 Baker Street in Long Beach, California” (“Site”). Oil Operators Incorporated (“OOI”) has been conducting environmental investigation and cleanup since 1981 at its property located at 712 Baker Street, Long Beach, California. According to the Order, OOI’s consultant, California Environmental, reported to the LARWQCB that it observed “elevated gasoline type hydrocarbon contamination” in soil and soil vapor during installation of a vapor extraction well (VES-A), which OOI was installing to mitigate a benzene soil vapor plume in this area. The extraction well was reported as being in proximity to an asphalt patch above BP-owned Pipeline No. 32 (“Line 32”). Atlantic Richfield Company (“ARC”), the entity that manages remediation activities for BP, and BP disagree with the assertions in the Order. On June 8, 2012, BP filed a petition with the State Water Resources Control Board to seek review of the Order.

BP information does not support the assertion that Line 32 is a source of a release of “gasoline type hydrocarbons.” On March 8, 2012, BP submitted a pipeline inventory to the LARWQCB, as required per a January 13, 2012 Order. The March 8, 2012 submittal indicated the following regarding Line 32:

Line 32 is an idled 12-inch diameter carbon steel crude and refined dark product line. Work is currently underway to re-activate this line. Line 32 was hydrotested (and passed) in 2012, and was inspected internally via "Smart Tool" in June 2011. During the Smart Tool inspection, some anomalies (dents) were identified in the vicinity of Baker Street and Golden Avenue, and those areas of the Line were subsequently bolstered with approved pipeline repair methods. BP was not able to locate any documentation indicating that a release has occurred from Line 32.

Please note that BP records for Line 32 indicate that the pipeline has not been used for the conveyance of gasoline. In addition, BP records indicate no evidence of leaks from Line 32. On March 4, 2012, BP completed preventative maintenance in two areas of Line 32 beneath Golden Avenue at locations 45 feet south of Baker Street and 375 feet south of Baker Street which consisted of re-coating dents. No corrosion or metal loss was observed at the dented areas, and no indications of leaks were noted. The line passed hydrotests in 2004 and most recently on November 2, 2011. BP disagrees that the Order's reference to "the pipeline release" from Line 32 is an appropriate conclusion and basis. As stated previously, there is no evidence of a release from Line 32.

BP Line 34 also travels beneath Golden Avenue, and, as reported in the March 8, 2012 letter, the 8-inch line conveys diesel and refined products. Line 34 passed hydrotests in 1990, 1992, 1994, 1997, 1998, 2004, 2007, and most recently in February 2010. There is also no evidence of a release from Line 34.

A former BP Line 6 was also located beneath Golden Avenue, adjacent to the OOI site. BP records indicate that the line is currently owned by Plains All American Pipeline, L.P. (PAA). The line is identified as Line 052 in a PAA March 2, 2012 letter sent to the LARWQCB. PAA reports that Line 052 is a 6-inch pipeline that is currently inactive but was previously used for the transport of crude oil.

Additionally, the Order is based largely upon data OOI's consultant shared with the LARWQCB. Those data identify photoionization detector (PID) readings obtained from vapor extraction system well VES-A (which is located on the OOI property) as the basis for the LARWQCB conclusion of a Golden Avenue pipeline release of "gasoline type hydrocarbons" in the area. BP disagrees that PID readings can be used to conclude the presence of gasoline in the absence of additional laboratory data.

To attempt to determine if the PID readings were due to gasoline contamination, BP requested from OOI on June 1, 2012 the total petroleum hydrocarbons (TPH) chromatograms for the vapor samples from well VES-A and from selected soil gas samples analyzed in July 2011. All of the information was not received until just recently, on June 29, 2012. BP's brief review of these data does not support the conclusion that gasoline contamination exists. So far, the chromatogram data suggest that a hydrocarbon source different from gasoline or "gasoline type hydrocarbons" exists at these locations. For example, neither the VES-A samples nor the soil gas samples contain the triplet of peaks due to ethylbenzene, m&p-xylene, and o-xylene expected in a gasoline source. Additionally, the VES-A vapor sample was predominantly cyclic hydrocarbons, and iso-octane (the gasoline fingerprint) was absent.

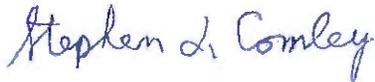
During our telephone conversation on July 6, 2012, I shared BP's belief that an extension is warranted to allow more than seven business days (June 29 to July 11) to evaluate the significance of these initial findings. BP's understanding is that the LARWQCB was not amenable to an extension but instead would consider the Order satisfied (and therefore BP's and ARC's involvement complete) upon preparation and implementation of a work plan designed to demonstrate that BP is not the source of "gasoline type hydrocarbons" at the Site.

Based on the information received and reviewed to date, BP believes that the rationale and conclusions presented as the bases for the Order are unsubstantiated for all the reasons explained here. However, to meet the requirements of the Order, BP has prepared the attached investigation Work Plan for your review and approval. The report has been transmitted to you electronically; if you would like a paper copy, please contact me, and we will be happy to provide one. An additional electronic copy has been forwarded to Mr. Samuel Unger of the LARWQCB. If you have any questions regarding the enclosed investigation report, please feel free to contact me at 562-728-2265.

I, Stephen D. Comley, do hereby declare that I am the Environmental Coordinator for BP Pipelines (North America) Inc. primarily responsible for BP's response to the Order, and am authorized to submit the enclosed Work Plan, which based on belief and information provided to me, is true and correct.

Executed this 11th day of July 2012 at Long Beach, California.

Sincerely,



Stephen D. Comley
Environmental Coordinator

Enclosure: [*BP US Pipelines & Logistics, Investigation Work Plan, Near 712 Baker Street, Long Beach, California. AECOM, July 11, 2012*]

cc: Mr. Samuel Unger, P.E., LARWQCB
Mr. Darrel K. Fah, Atlantic Richfield Company
Mr. Frank Muramoto, P.G., AECOM
Ms. Mary Jo Anzia, AECOM



Environment

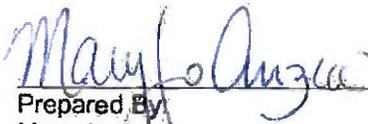
Submitted to:
LARWQCB
Los Angeles, CA

Prepared by:
AECOM
Long Beach, CA
60268152
July 11, 2012

**BP Pipelines (North America) Inc.
Investigation Work Plan
Near 712 Baker Street
Long Beach, California**

Prepared for:
Atlantic Richfield Company
Carson, California

BP Pipelines (North America) Inc. Investigation Work Plan Near 712 Baker Street Long Beach, California


Prepared By
Mary Jo Anzia
Project Manager


Reviewed By:
Frank Muramoto, P.G., C.H.G.
Senior Program Manager



Professional Certification

BP Pipelines (North America) Inc. Investigation Work Plan Near 712 Baker Street Long Beach, California

The staff of AECOM Environment has prepared this report under the professional supervision of the person whose seal and signature appear hereon.



Frank Muramoto, P.G., C.H.G.
Senior Program Manager
California Professional Geologist #4248



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Appendix A LARWQCB Order (May 11, 2012)

Appendix B BP Pipeline Summary Letter (March 8, 2012)

Appendix C BP Line 32 SCAQMD 1166 Monitoring (November 2011)

1.0 Introduction

On behalf of BP Pipelines (North America) Inc. ("BP") and the Atlantic Richfield Company ("ARC"), which manages remediation activities for BP, AECOM has prepared this Investigation Work Plan ("Work Plan") in response to the May 11, 2012 order from the Los Angeles Regional Water Quality Control Board (LARWQCB) to BP (the "Order"), attached in Appendix A. The purpose of the Work Plan is to investigate the source of potential impacts to soil and soil vapor along Golden Avenue between Baker Street and Wardlow Road (the "Site"), near BP Pipeline No. 32 ("Line 32"), in Long Beach, California (Figure 1, Site Location Map). The Site is located near 712 Baker Street in Long Beach, California. Oil Operators Incorporated ("OOI") has been conducting environmental investigation and cleanup at its property located at 712 Baker Street, Long Beach, California. The OOI property covers about 20 acres and is bounded on the east by Golden Avenue. BP "Line 32" runs beneath Golden Avenue along the eastern boundary of the OOI property.

According to the Order, "elevated gasoline type hydrocarbon contamination" was observed in soil and soil vapor during installation of vapor extraction well VES-A, which OOI was installing to mitigate a benzene soil vapor plume in this area. The extraction well was reported as being in proximity to an asphalt patch above BP-owned Line 32. Information reviewed to date does not support the assertion that Line 32 is a source of a release of "gasoline type hydrocarbons." BP has petitioned the State Water Resources Control Board to review the Order.

The Order identifies photoionization detector (PID) readings obtained from vapor extraction system well VES-A, which is located on the OOI property. These PID readings are referenced as the basis for the LARWQCB conclusion of a Golden Avenue pipeline release of "gasoline type hydrocarbons" in the area. On June 1, 2012, ARC requested supporting raw laboratory analytical results and vapor sample chromatograms for VES-A and all 2011 data from OOI, and has conducted preliminary reviews of these data in consultation with expert scientists since it was received on June 29, 2012. The preliminary evaluation of these data and other information received to date serve as the basis for the response actions proposed in this Work Plan.

The locations, history of use, and maintenance details for BP-owned pipelines in the vicinity of the Site were presented in a March 8, 2012 letter to the LARWQCB (Appendix B) and are further described in Section 1.3 and in the BP cover letter to this Work Plan.

1.1 Site Background and Adjacent Surroundings

The Site is generally comprised of the area surrounding Line 32 along Golden Avenue between Baker and Wardlow Streets. The Site is bounded by Baker Street and the 405 freeway to the north, residences to the east, Wardlow Road to the south, and the Oil Operators Inc., (OOI) property and the Los Angeles River to the west. The adjacent OOI facility treated oil brine and wastewater from oil production using clay lined evaporation basins beginning in 1926. The facility is now closed and many of the structures have been demolished. Numerous investigations and remedial activities have been conducted on the adjacent OOI property since 1981 (California Environmental, 2012).

1.2 Site Geology and Hydrogeology

Regionally, the Site is located within the West Coast sub-basin of the Los Angeles Basin. Commonly referred to as the "West Coast Basin," the Basin is an elongated northwest-trending coastal plain bounded on the north by the Ballona Escarpment, an abandoned erosional channel from the Los Angeles River, on the east by the Newport-Inglewood fault zone, and on the south and west by the Pacific Ocean and consolidated rocks of the Palos Verdes Hills (CDWR, 1961). The Cherry Hill Fault, part of the Newport-Inglewood Fault Zone, passes approximately one-quarter mile east of the Site, and reportedly disrupts regional hydrological flow patterns to the west-southwest (EMCON, 1981).

Geology underlying the Site consists of unconsolidated and semi-consolidated marine and alluvial deposits of the Lakewood Formation, which includes the Gage aquifer. Within the underlying San Pedro Formation are the Lynwood and Silverado water-bearing units. The Silverado aquifer, found more than 400 feet below mean sea level, produces 80 to 90 percent of groundwater extracted annually from the West Coast Basin (DWR, 1961).

According to OOI documents available on the GeoTracker Web site, depth to groundwater in the vicinity of the Site ranged between 30 and 65 feet below ground surface (bgs) over the last 30 years (Brycon, 2011; EMCON, 1981).

1.3 Site Pipelines

BP owns two pipelines beneath Golden Avenue (Figure 2):

- BP Line 32: An inactive 12-inch crude and refined dark products line located approximately 2 to 4 feet bgs beneath Golden Avenue. On March 8, 2012, BP provided records to the Board about the pipelines and advised that it was not able to locate any documentation indicating that a release has occurred from Line 32. BP records for Line 32 indicate that the pipeline has not been used for the conveyance of "gasoline-type hydrocarbons." In addition, BP records indicate no evidence of leaks from Line 32. On March 4, 2012, BP completed preventative maintenance in two areas of Line 32 beneath Golden Avenue at locations 45 feet south of Baker Street and 375 feet south of Baker Street which consisted of re-coating dents. No corrosion or metal loss was observed at the dented areas, and no indications of leaks were noted. Monitoring results of the excavated soil generated during repairs using a photoionization detector (PID), per South Coast Air Quality Management District (SCAQMD) Rule 1166 requirements, were all zero (0) ppmv (Appendix C). The line passed hydrotests in 2004 and most recently on November 2, 2011.
- BP Line 34: An active 8-inch diesel and refined products line located approximately 3 feet beneath Golden Avenue. Line 34 passed hydrotests in 1990, 1992, 1994, 1997, 1998, 2004, 2007, and most recently in February 2010. There is also no evidence of a release from Line 34.

A former BP Line 6 was also located beneath Golden Avenue, adjacent to the OOI site. BP records indicate that the line is currently owned by Plains All American Pipeline, L.P. (PAA). The line is identified as Line 052 in a PAA March 2, 2012 letter sent to the LARWQCB (Plains, 2012). PAA reports that Line 052 is a 6-inch pipeline that is currently inactive but was previously used for the transport of crude oil.

2.0 Investigation Activities

Based on the need to evaluate existing data, and to avoid duplication of data, BP has developed a phased investigation approach that will provide information related to whether Line 32 could be associated with the total petroleum hydrocarbons as gasoline (TPHg) referenced in the Order. The assessment activities proposed by ARC are presented in the following subsections.

2.1 Forensic Data Evaluation – Phase 1

The Order requires that BP prepare and submit a Work Plan for soil and soil vapor investigations to assess and delineate the extent of contamination in soil and soil vapor, if any, attributable to Line 32. BP cannot reasonably determine the scope of necessary investigation activities without first completing an evaluation of chromatograms and other raw data associated with the findings referenced in the Order. The Order identifies PID readings, grey discoloration of sediments, and odors observed during OOI's installation of VES-A, as the basis for the LARWQCB conclusion of a release of "gasoline type hydrocarbons" in the area. BP's initial review of these data (since receipt of the data on June 29, 2012) does not support this conclusion. Specifically, BP's findings to date include the following:

- Interpretation of the TPH chromatograms suggests that a hydrocarbon source different from gasoline exists at VES-A and surrounding OOI sample locations. The VES-A samples and all of the soil gas samples showed characteristics not present in the gasoline calibration samples or the gasoline headspace sample.
 - Neither the VES-A samples nor the soil gas samples contained the triplet of ethylbenzene, m&p-xylene, and o-xylene expected in a gasoline source.
 - Two soil gas samples (CESV2-40' and CESV7-33') very closely match VES-A. CESV2 is in the northern part of the OOI property, north of Baker Street and away from BP Line 32. CESV7 also lies on the OOI property, approximately 80 to 100 feet from the pipeline.
 - Several soil vapor samples on the OOI property resembled each other but not gasoline. These samples (CESV2, CESV7, CESV10, and CESV15) had similar compositions, characterized by the predominance of cyclic hydrocarbons, and the absence of iso-octane (a gasoline fingerprint).
 - Similarly, the VES-A vapor sample was predominantly cyclic hydrocarbons and iso-octane was absent.

The findings indicate that the samples collected by OOI are not gasoline and are not related to Line 32. To further establish whether the hydrocarbons observed during installation of VES-A could be potentially connected with known groundwater contamination from the OOI site or with a potential pipeline release, BP will request to obtain and then evaluate chromatograms and additional raw laboratory data of laboratory analyzed groundwater samples which were collected during recent groundwater monitoring activities by OOI. If these data further support the conclusion that Line 32 is not the source of "gasoline type hydrocarbons," BP will submit a report of its findings; and Phase 2 (Section 2.2) will not be conducted.

2.2 Vertical Profile of Soil Vapor & Lithology – Phase 2

If Phase 2 of the proposed investigation is necessary, Phase 2 will include developing a vertical profile at the location adjacent to VES-A to verify the nature and vertical extent of soil vapor contaminants observed during installation of VES-A. Soil gas sampling with corresponding soil boring advancement will be conducted. In general, the soil gas samples will be collected every 2 to 5 feet bgs to 30 or more feet bgs.

2.2.1 Pre-field Activities

Prior to subsurface investigation activities, and in accordance with BP pre-drilling clearance protocols, the proposed borehole location will be cleared to ensure the safe advancement of a subsurface boring. At the soil vapor and boring location, the upper 4 feet will be cleared of utilities using hand-auger equipment. In accordance with BP's ground disturbance protocols, a variance will be required to discontinue clearance by hand auger at 4 feet rather than 6 feet, so that a high resolution profile can be developed closer to the depth of the pipelines. Underground Service Alert service will be used to mark and check all known underground utilities near the proposed location of the soil boring. Additionally, a third party locator, SubSurface Surveys, Inc. of Carlsbad, California, will be used to identify and mark subsurface structures/utilities detected near the location. Site access will be requested from OOI, the owner of the property.

2.2.2 Proposed Soil Boring and Soil Vapor Sampling at VES-A

The proposed investigation includes a soil boring used for discrete depth soil vapor sampling advanced in proximity to OOI's well VES-A on its southeast side between the well and the location of the pipeline repair on Line 32, if practicable (Figure 2). The final soil boring location will be selected following Site reconnaissance and utility clearance.

A truck-mounted direct push rig will be used to advance the soil boring and multi-depth soil vapor sampling will be conducted utilizing post run tubing (PRT). PRT involves inserting a disposable steel vapor tip to the desired depth, then pulling a vapor sample through tubing that runs down the center of the driving rod. Soil vapor samples will be collected at 2-foot intervals between 4 and 16 feet bgs, and then at 5-foot intervals from 20 feet bgs to the total depth. Total depth is anticipated at 30 feet bgs, but will be decided based on field observations.

Soil vapor samples will be analyzed by a mobile laboratory for the parameters listed below:

- Fixed gases (O₂, CO₂, and CH₄) using the mobile laboratory or with a calibrated portable field meter, and
- TPH using EPA Method 8015M.

Following completion of the soil vapor sampling, a direct push soil boring will be advanced in proximity of the soil vapor borehole for lithological characterization. A truck-mounted direct push rig will be used to advance the soil boring. Continuous soil sampling will be conducted to an anticipated depth of 30 feet bgs. Field screening of soils for vapors will be conducted using a PID and the headspace technique. Soil will be logged by an AECOM geologist in accordance with the Unified Soil Classification System (USCS). Observations of the presence of hydrocarbon and soil moisture/saturation will also be noted on the logs.

Solid waste derived from the soil borings will be contained in sealed 55-gallon drums; the solid waste will be tested and ultimately transported to an ARC-approved disposal facility.

A California-licensed surveyor will survey the northing and easting coordinates of each soil boring and soil vapor probe location and the elevation of the ground surface at each location.

2.2.3 Health & Safety

A site-specific health and safety plan (HASP) will be developed for field activities. All workers will have completed 40-hour OSHA training (per 29 CFR 1910.120(e)) and be current with annual refresher training. All on-site personnel will be informed of, and must adhere to, requirements of a site-specific HASP. Hard hats, safety glasses with side shields, steel toe boots, orange reflective vests shall be worn at all times during soil and groundwater sampling activities. An initial health and safety kick-off meeting and daily interactive safety meetings will be held to discuss the plan of the day and identify potential hazards and implement appropriate safety precautions. It is anticipated that the field activities will be conducted using Level D personal protective equipment. Continuous air monitoring will be conducted during field activities to monitor vapor concentrations and ensure the safe operation of each task.

3.0 Reporting and Schedule

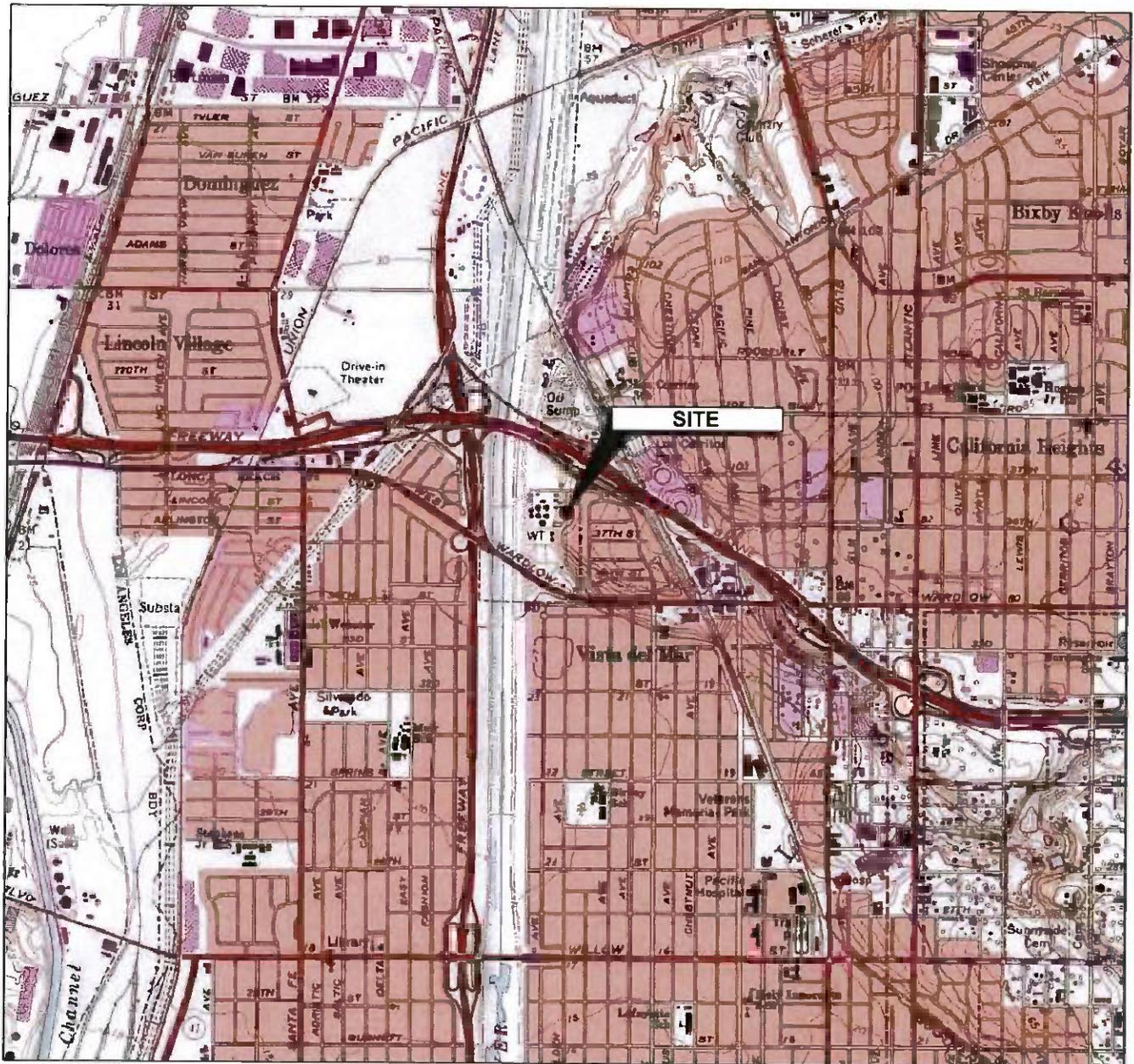
Phase I will be completed within 30 days of receipt of requested chromatograms and raw laboratory data from selected OOI groundwater monitoring wells. If Phase 2 work is required, BP will notify the LARWQCB 5 days in advance of implementing the proposed field work.

4.0 References

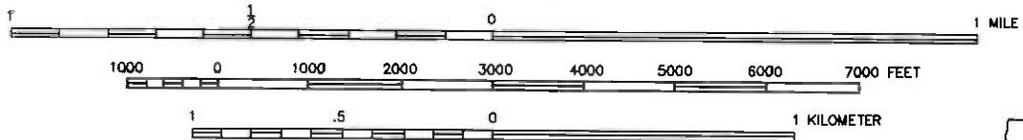
- Brycon, 2011. Report on Additional Site Characterization Oil Operators, Inc. 712 Baker Street Long Beach, CA SCP Case No. 0093, SCPID No. 2044M00. Prepared for Oil Operators, Inc. September 30. Newport Beach, CA.
- California Department of Water Resources (CDWR), 1961. Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Appendix A – Groundwater Geology, CDWR Bulletin No. 104, p. 116.
- California Environmental Geologists and Engineers, 2012. Email Correspondence from Mr. Charles I. Buckley, P.G. (California Environmental) to Mr. Pinaki Guha-Niyogi (LARWQCB), Subject: *OOI Update April 25*.
- EMCON, 1981. *Hydrogeologic Investigation, Industrial Waste Transfer Station, Long Beach, California*. Prepared for Chemical Waste Management, Inc. February 1981. San Jose, CA.
- LARWQCB, 2012. Letter from Mr. Samuel Unger, P.E. (LARWQCB) to Ms. Donna Diracco (BP Pipelines), Subject: *Requirement for Technical Report on Soil and Soil Vapor Investigations – Pursuant to California Water Code Section 13267 Order*, May 11.
- Plains, 2012. Letter from Mr. Jordan R. Janak (Plains West Coast Terminals LLC) to Mr. Pinaki Guha-Niyogi (LARWQCB), Subject: *Technical Report on Pipeline Inventory (Order No. R4-2010-0010)*, March 2.

Figures

File: T:\BPI\Golden_and_Baker\Workplan\Projects\Fig1_Site Location Map_A1.dwg Layout: Layout1 User: MervinS Plotted: Jun 01, 2012 - 7:49am



SCALE 1:24,000



Portion of 7.5-minute Series (Topographic) Map
 United States Department of the Interior
 Geological Survey
 Long Beach, California Quadrangle 1981



QUADRANGLE LOCATION

NORTH GOLDEN AVENUE

INVESTIGATION WORK PLAN
 INTERSECTION OF BAKER STREET AND
 LONG BEACH, CALIFORNIA

SITE LOCATION MAP

12345678 SM MW 5/31/12



PROJECT NO.	DRWN.	CKD.	DATE.	FIGURE 1
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Appendix A

LARWQCB Order (May 11, 2012)



Los Angeles Regional Water Quality Control Board

May 11 2012

Ms. Donna DiRocco
BP Pipelines (North America) Inc./Atlantic Richfield Company
1300 Pier B Street
Long Beach, CA 90813

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7001 2510 0002 2221 6115**

SUBJECT: REQUIREMENT FOR TECHNICAL REPORT ON SOIL AND SOIL VAPOR INVESTIGATIONS – PURSUANT TO CALIFORNIA WATER CODE SECTION 13267 ORDER

SITE/CASE: NEAR 712 BAKER STREET, LONG BEACH, CALIFORNIA

Dear Ms. DiRocco:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is the public agency with primary responsibility for the protection of groundwater and surface water quality for all beneficial uses within major portions of Los Angeles and Ventura counties, including the referenced Site. To accomplish this, the Regional Board oversees the investigation and cleanup of discharges of waste adversely affecting the State's water, authorized by the Porter-Cologne Water Quality Control Act (California Water Code [CWC], Division 7).

Under the oversight of this Regional Board and the Long Beach Health and Human Services Department, Oil Operators Incorporated (OOI) has been conducting environmental investigation and cleanup at its property located at 712 Baker Street, Long Beach. The OOI property covers approximately 20-acres and is located south of the 405 Freeway, east of the 710 Freeway and the Los Angeles River, in the City of Long Beach. It is bounded on the south by Wardlow Road and on the east by Golden Avenue. A residential development is present to the east of the property, across Golden Avenue.

The Regional Board has evidence from recent site assessment activities conducted in the vicinity of the subject location that indicates that there is or has been a discharge of waste from a pipeline that runs beneath the western portion of Golden Avenue, outside the eastern perimeter of the OOI property (Line 32). BP Pipelines (North America) Inc./Atlantic Richfield Company (BP) owns and operates this crude and refined products pipeline.

In order to determine the impact to soil resulting from the pipeline release, and to protect human health and the waters of the state for their beneficial uses, a work plan for soil and soil vapor investigations on both sides of Line 32 along Golden Avenue is required.

Enclosed is a Regional Board Order requiring, pursuant to section 13267 of the CWC, that you provide this Regional Board with a work plan for soil and soil vapor investigations on both sides of Line 32, along Golden Avenue, to determine the extent of wastes in soil in the vapor and adsorbed phases.

MARIA MICHONIAN, CHIEF | SAMUEL UNGER, EXECUTIVE OFFICER

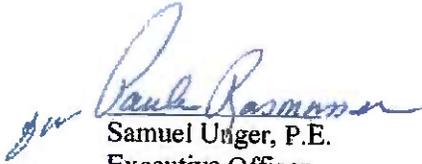
390 West 31st St., Suite 200, Los Angeles, CA 90015 | www.waterboards.ca.gov/larjagglew

Ms. Donna DiRocco
BP Pipelines (North America) Inc./Atlantic Richfield Company

May 11, 2012

Should you have any questions, please contact Mr. Pinaki R. Guha-Niyogi, of my staff at (213) 576-6731 (pguha@waterboards.ca.gov).

Sincerely,


Samuel Unger, P.E.
Executive Officer

Attachment: Requirement to Provide Technical Report

cc: Councilman James Johnson, City of Long Beach
Ms. Nelson Kerr, City of Long Beach, Health and Human Services Department
Ms. Carmen Piro, City of Long Beach, Health and Human Services Department
Ms. Tracy Barreau, California Department of Public Health
Ms. Marylyn C. Underwood, California Department of Public Health
Ms. Joan Greenwood, Wrigley Area Neighborhood Alliance
Mr. Kevin Laney, Oil Operators, Inc.
Mr. George B. Paspalof, Brycon LLC
Mr. Bob Sinclair, Plaines Pipeline



Los Angeles Regional Water Quality Control Board

**REQUIREMENT TO PROVIDE A TECHNICAL REPORT ON
SOIL AND SOIL VAPOR INVESTIGATIONS**

CALIFORNIA WATER CODE SECTION 13267 ORDER NO. R4-2012-0085

**DIRECTED TO BP PIPELINES (NORTH AMERICA) INC./ATLANTIC RICHFIELD
COMPANY**

**SOIL AND SOIL VAPOR INVESTIGATIONS IN THE VICINITY OF GOLDEN AVENUE AND
BAKER STREET
LONG BEACH, CALIFORNIA**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) makes the following findings and issues this Order pursuant to California Water Code section 13267.

1. Under the oversight of this Regional Board and the Long Beach Health and Human Services Department, Oil Operators Incorporated (OOI) has been conducting environmental investigations and cleanup at its property, located at 712 Baker Street, Long Beach. The OOI property covers approximately 20 acres and is located south of the 405 Freeway, east of the 710 Freeway and the Los Angeles River, in the City of Long Beach. It is bounded on the south by Wardlow Road and on the east by Golden Avenue. A residential development is present to the east of the property, across Golden Avenue.
2. California Water Code section 13267(b) states, in part: In conducting an investigation. . . , the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or, discharging, or who proposes to discharge waste within its region . . . shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
3. The Regional Board has evidence from recent site assessment activities conducted in the vicinity of the subject location by California Environmental that indicates that there is or has been a discharge of waste from a pipeline that runs beneath the western portion of Golden Avenue, outside the eastern perimeter of the OOI property (Line 32). BP Pipelines (North America) Inc./Atlantic Richfield Company (BP) owns and operates this crude and refined products pipeline. The evidence supporting this requirement includes data provided by Charles Buckley of California Environmental on April 25, 2012, that elevated gasoline type hydrocarbon contamination was observed in soil vapor and soil during installation of vapor extraction well A. Vapor extraction well A was installed along with four other vapor extraction wells (B, C, D & E)

MARIA V. GONZALEZ, CHAIR | SAMUEL URBAN, EXECUTIVE DIRECTOR

270 West 6th St. | Suite 2000 | Los Angeles, CA 90013 | www.waterboards.ca.gov/laowrc

to mitigate the benzene soil vapor plume, present beneath the northern portions of the OOI site, beneath portions of Golden Avenue and beneath some residential homes on the east side of Golden Avenue. Very strong gasoline-type odors and grey discoloration was observed in the sediments in well A, from a depth of 8 feet to 28 feet below grade. Photo Ionization Detector (PID) readings taken during installation of well A ranged from 500-2000 parts per million parts by volume (ppmv). High concentrations of Total Petroleum Hydrocarbon as gasoline (TPH-g) were found in soil vapor extracted from well A (>18,000 ppmv via PID). Well A is in close proximity to an asphalt patch present directly above Line 32, on the west side of Golden Avenue. Review of building permit records at the City of Long Beach revealed that BP applied for a Discretionary Permit on September 19, 2011, to excavate at two locations on Golden Avenue along Line 32, in order to expose the piping at these two locations and perform necessary repairs to maintain the integrity of Line 32. The location of the northern excavation, indicated in the permit, matched the asphalt patched area near well A, confirming that a potential release occurred in the pipeline that caused the soil discoloration resulting in high PID readings.

4. This Order identifies BP Pipelines (North America) Inc./Atlantic Richfield Company as the entity suspected of being responsible for the discharges of waste identified in paragraph 3, because it owns or operates pipelines in the vicinity of Golden Avenue.
5. This Order requires the persons named herein to prepare and submit a work plan for soil and soil vapor investigations on both sides of Line 32 along Golden Avenue to determine the impact to soil resulting from the pipeline release.
6. The burdens, including costs, of these reports bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The information is necessary to determine the extent of waste detected in the soil beneath Golden Avenue in Long Beach, and to protect human health and the waters of the state.
7. The issuance of this Order is an enforcement action by a regulatory agency and is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to section 15321(a)(2), Chapter 3, Title 14 of the California Code of Regulations. This Order requires submittal of technical and/or monitoring reports that will not have adverse impacts on the environment. If the implementation results in significant impacts to the environment, the appropriate lead agency will address the CEQA requirements prior to implementing any work.
8. Any person aggrieved by this action of the Regional Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must *receive* the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

THEREFORE, IT IS HEREBY ORDERED that BP Pipelines (North America) Inc./Atlantic Richfield Company, pursuant to section 13267(b) of the California Water Code, is required to submit the following:

May 11, 2012

1. By **June 11, 2012**, prepare and submit a work plan for a soil (soil vapor and soil matrix) investigation to assess and delineate the lateral and vertical extent of contamination in the vapor and adsorbed phase, on both sides of Line 32 along Golden Avenue.

Item 1 shall be sent via electronic mail to:

Mr. Pinaki Guha-Niyogi
Case Manager
California Regional Water Quality Control Board – Los Angeles Region
320 W. 4th Street, Los Angeles, CA 90013
213-576-6731
pguha@waterboards.ca.gov

The technical report is required to be submitted under the CWC section 13267 Order. Pursuant to 13267(a) of the CWC, any person who fails to submit reports in accordance with the Order is guilty of a misdemeanor. Pursuant to section 13268(b) of the CWC, failure to submit the required technical report described above by the specified due date(s) may result in the imposition of administrative civil liability by the Regional Board in an amount up to one thousand dollars (\$1,000) per day for each day the technical report is not received after the above due date. These civil liabilities may be assessed by the Regional Board for failure to comply, beginning with the date that the violations first occurred, and without further warning.

The Regional Board, under the authority given by California Water Code (CWC) section 13267, subdivision (b), requires you to include a perjury statement in all reports submitted under the 13267 Order. The perjury statement shall be signed by a senior authorized BP Pipelines (North America) Inc./Atlantic Richfield Company representative (not by a consultant). The perjury statement shall be in the following format:

"I, [NAME], certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The State Water Resources Control Board (State Water Board) adopted regulations requiring the electronic submittals of information over the Internet using the State Water Board GeoTracker data management system. You are required not only to submit electronic copy reports required in this Order, but also to comply by uploading all reports and correspondence prepared to date on to the GeoTracker data management system. The text of the regulations can be found at the URL:

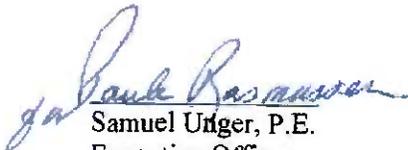
Ms. Donna DiRocco
BP Pipelines (North America) Inc.
Atlantic Richfield Company

- 4 -

May 11, 2012

http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal

SO ORDERED.


Samuel Unger, P.E.
Executive Officer

May 11, 2012

Appendix B

BP Pipeline Summary Letter (March 8, 2012)



BP Pipelines (North America) Inc.

5905 Paramount Blvd.
Long Beach, CA 90805
Phone 562 728-2265
Fax 562 728-2760

March 8, 2012

Mr. Samuel Unger, P.E.
Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Subject: Transmittal of Technical Report on Pipeline Inventory
Requirement for Technical Report - Pursuant to California Water Code Section 13267
Order No R4-2012-0009

Site/Case: Near 712 Baker Street
Long Beach, California

Dear Mr. Unger:

BP Pipelines (North America) Inc. ("BP") is in receipt of the subject Regional Water Quality Control Board ("LARWQCB") Order, dated January 13, 2012. The Order stems from the detection of volatile organic compounds (VOCs) and/ or petroleum hydrocarbons associated with environmental investigations conducted by others at the former Oil Operators Incorporated (OOI) site located at 712 Baker Street, in Long Beach, California. According to Geotracker, the OOI site operated from 1926 to approximately 1998 as treatment facility for water and other fluids recovered during oil production. Reportedly oil and sediment was removed from the water, allowing the treated water to be disposed of offsite. Low-grade oil that was recovered in the process was reportedly sent elsewhere for recycling. Environmental investigations have been ongoing at the OOI site since the early 1980s.

The Order states that subsurface investigations conducted by OOI have discovered concentrations of light-end total petroleum hydrocarbons (TPH; C5-C11), benzene, and 1,2-dichloroethane (1,2-DCA) along Golden Avenue, which the Order alleges is where BP owns and operates a pipeline. The Order requires BP to submit an inventory of all pipelines ever owned or operated that are located within one mile of the intersection of Baker Street and Golden Avenue in Long Beach, California. The Order also requires BP to submit a number of specific pieces of information for each pipeline and a scaled map clearly identifying the location of each pipeline. BP understands that a similar Order was issued to Plains Pipelines, which is also alleged to have one or more pipelines in this area.

In response to the January 13, 2012 Order, BP compiled a table of pipelines historically or currently owned or operated by BP or its affiliated companies located within one mile of the intersection of Baker Street and Golden Avenue. The attached pipeline inventory table (Enclosure 1) presents the required information in the requested format. A scaled drawing of the pipeline locations is included as Enclosure 2. These files have also been submitted electronically to Mr. Pinaki Guha-Niyogi of your staff, as per the Order.

Please Note: This submittal and associated electronic files have not been uploaded to Geotracker, since as of today's date BP has not been able to locate a BP "site" in Geotracker related to this Order.

Summary

BP identified six (6) pipelines located within a one-mile radius of the intersection of Baker Street and Golden Avenue. They are Lines: 'E1', 'E32', '32', '32 Abandoned', '34', and '6" Wastewater (WW) Line 252'. The BP pipelines crossing near the specified location (and also nearest to the OOI site) are Lines '32' and '34' and are therefore discussed in more detail below.

Line 32

Line 32 is an idled 12-inch diameter carbon steel crude and refined dark products line. Work is currently underway to re-activate this line. Line 32 was hydrotested (and passed) in 2012, and was inspected internally via "Smart Tool" in June 2011. During the Smart Tool inspection, some anomalies (dents) were identified in the vicinity of Baker Street and Golden Avenue, and those areas of the Line were subsequently bolstered with approved pipeline repair methods. BP was not able to locate any documentation indicating that a release has occurred from Line 32.

Line 34

Line 34 is an active 8-inch diameter carbon steel diesel and refined products Line. Line 34 is divided into several segments, with segment C crossing through the area of Baker Street and Golden Avenue. Segment C was hydrotested (and passed) in February 2010 after re-locating/replacing a section of the line that crosses under the MTA track (approximately 160 feet) located between Del Mar Avenue and Pacific Place. This was precautionary only - there was no release of product. The abandoned section was filled with mud. BP did not locate any documentation indicating that a release has occurred from Line 34.

The requested details regarding each of the six pipelines are provided in the attached Enclosures.

Conclusion

As required by the Order, BP has researched its pipelines located within a one-mile radius of Baker Street and Golden Avenue, in Long Beach, California. Of the six lines identified, only two are considered by BP to potentially be relevant to the offsite contamination detected along Golden Avenue – which is immediately adjacent to the former OOI site.

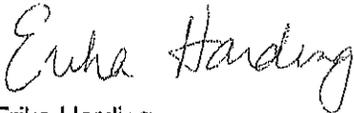
BP has identified no information indicating that a release occurred from either of its two nearby BP pipelines (Lines '32' or '34'). Therefore, BP respectfully requests that the Order be rescinded, and that no further action be required of BP as it relates to this matter.

Perjury Statement:

I, Erika Harding, certify under penalty of law that this document and all attachments were prepared by me, or under my direct supervision, in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions regarding the submitted information, please feel free to contact Mr. Steve Comley of BP at (562) 728-2265.

Sincerely,
BP Pipelines (North America) Inc.



Erika Harding
Pipeline Operations Manager

Enclosures:

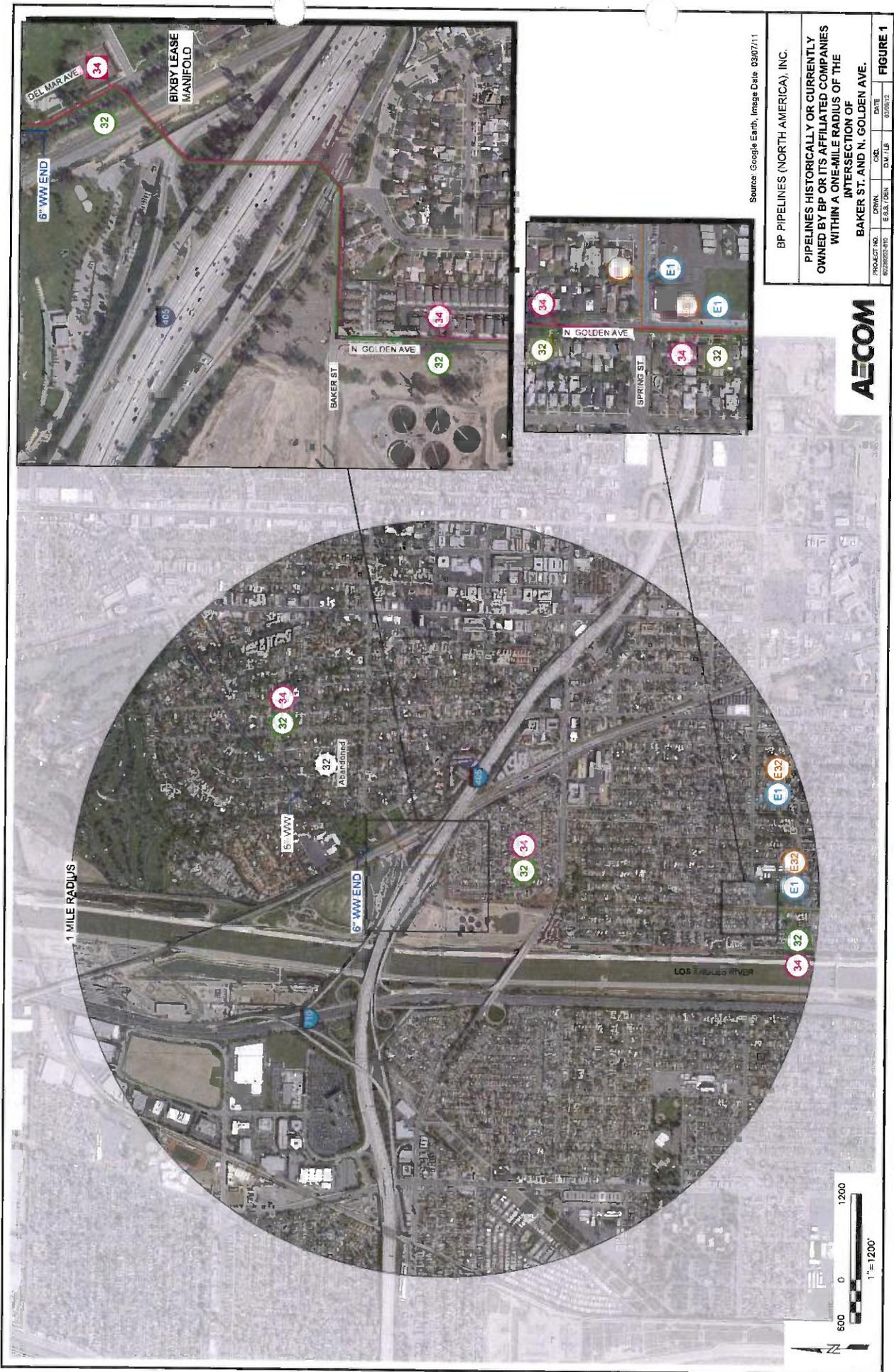
- Enclosure 1: Pipeline inventory
- Enclosure 2: Pipelines location map

cc: Councilman James Johnson, City of Long Beach
Mr. Pinaki R. Guha-Niyogi, LARWQCB
Ms. Tracy Barreau, California Department of Public Health
Ms. Joan Greenwood, Wrigley Area Neighborhood Alliance
Mr. George B. Paspalof, Brycon LLC
Ms. Carmen Piro, City of Long Beach, Health and Human Services Department
Mr. Bob Sinclair, Plaines Pipeline
Ms. Marylyn C. Underwood, California Department of Public Health
Mr. Steve Comley, BP Pipelines (North America) Inc.
Mr. John Skance, BP Remediation Management

Inventory of Pipelines within 1 Mile Radius of 712 Baker Street
March 8, 2012

Pipeline Identification Number	Current Owner	Former Owner(s) and Years of Ownership	Pipeline Diameter	Construction Material	Products Transported Through Line and Years of Transport	Oxygenates Transported Thru Line	Current Status (Active/Inactive)	Integrity Test Failure (Yes/No)
1	ET	Harcross/Original pre-1970 Edgerton 1970-1988 ARCO Terminal Services Corporation 1988-present	8.0, 10 inch	Carbon Steel	Crude Oil	No	Active Line has been cut up	Hydrotested 11/03/1987 Hydrotested January 2004 // did not pass // Line removed from service
2	ATSC	Hennock/Sigma pre-1870 Edgerton 1970-1988 ARCO Terminal Services Corporation 1988-present	8 inch	Carbon Steel	Refined Product (including gasoline)	Reformulated gasoline	Active Active CP	Hydrotested - 2/11/2004 - passed
3	ATSC	Union Oil 1922-1929 Pan American Petroleum 1929-1937 Richfield 1937-1966 Atlantic Richfield 1966-1988 ARCO Terminal Services Corp 1988-present	12 inch	Carbon Steel	Crude & Refined Dark Products	No	In process of being re-evaluated Line Decided B / D / E / F will be active after start-up Active CP	Hydrotested in 2012 - passed Smart tool (in line inspection run in 2011 / 3 anomalies (cracks) in the vicinity of Baker St / Golden Ave were detected and repaired by reworking / 1 check spring
4	Abandoned	Union Oil 1922-1929 Pan American Petroleum 1929-1937 Richfield 1937-1966 Atlantic Richfield 1966-1988 ARCO Terminal Services Corp 1988-present	6, 10, 12 inch	Carbon Steel	Crude & Refined Dark Products	No	Inactive Active CP Sections A / C will remain life	Hydrotested Sections A/B/D/E - 11/14/2009 8/7/2004 - Line taken Out of Service, placed in water until reactivation
5	ATSC	Richfield 1927 - 1986 Atlantic Richfield 1986-1988 ARCO Terminal Services Corp 1988-present	8 inch	Carbon Steel	Diesel Refined products	Reformulated gasoline	Active Active CP	Hydrotested 2/7/2010 - sections A/C passed Hydrotested 2/19/2010 - section E passed Approximately 165 feet of the gas reformulated between Dal Mar Avenue and Pacific Place. Precastatory only - no release of product (2010).
6	5" Wastewater (WW) Line 252	ARCO - dates unavailable	6 inch 4 inch - 600 ft	Carbon Steel	City water June 1983 used for WW / prior service was gasoline Some piping removed starting in 1977	No	Inactive - 1995 No active CP	No hydrotest records available

Notes:
Location of pipelines can be found (using 1 mile radius) on Los Angeles Thomas Guide, pages 765 (C7) and 795 (C1)
Construction Material of all pipelines is assumed to be carbon steel based on age of pipelines
Construction information for all pipelines is Stephen D. Conley (562) 728-2265 stephen.conley@atp.com
Information regarding pipeline size, connectivity, status, and current ownership is derived from an ARCO database known as the OI Database (Operational Integrity Database) and other reference sources
Information regarding the historic ownership is derived from historical Right-of-Way records
Integrity test information is derived from project files
ATSC - ARCO Terminal Services Corporation



File: \\BP-Corson\DWSS\AREA MAP - Baker St & Golden Ave.dwg Plotted: Mar 09, 2012 - 8:47am Xref's:

Source: Google Earth, Image Date: 8/30/11

BP PIPELINES (NORTH AMERICA), INC.			
PIPELINES HISTORICALLY OR CURRENTLY OWNED BY BP OR ITS AFFILIATED COMPANIES WITHIN A ONE-MILE RADIUS OF THE INTERSECTION OF BAKER ST. AND N. GOLDEN AVE.			
PROJECT NO.	DRAWN	CHECKED	DATE
8028800-010	E.S.B./L.B.	D.M./L.B.	03/09/12

AECOM



1" = 1200'





PLAINS

West Coast Terminals LLC

March 02, 2012

Mr. Pinaki Guha-Niyogi,
Case Manager
California Regional Water Quality Control Board - Los Angeles Region
320 W. 4th Street, Suite 200,
Los Angeles, CA 90013

RE: TECHNICAL REPORT ON PIPELINE INVENTORY (Order No. R4-2010-0010)

Dear Mr. Guha-Niyogi:

This technical report on pipelines operated by Plains All American Pipeline, L.P. (PAA) and its affiliates has been prepared to meet the requirements of the California Regional Water Quality Control Board (Regional Board) Clean Water Code (CWC) Order, Order No. R4-2010-0010. Copy attached.

This order has been issued because "... *The Regional Board has evidence from recent site assessment activities conducted at the vicinity of the subject location that indicate that there is or has been a discharge of waste from the site [712 Baker Street, Long Beach]. The evidence supporting this requirement is that elevated volatile organic and/or petroleum compounds in soil vapor and groundwater have been identified, mainly along the Golden Avenue where Plains All American Pipeline, L.P., allegedly, owns and operates a pipeline. The detected contaminants in the soil vapor include total petroleum hydrocarbons or TPH (C5-C11) and benzene, among others, in concentrations up to 55,000 micrograms per liter ($\mu\text{g/l}$) and 390 $\mu\text{g/l}$, respectively. The elevated contaminants in groundwater appear to coincide with the soil vapor plume, including benzene and 1,2-dichloroethane (1,2-DCA) in concentrations up to 1,700 and 13 $\mu\text{g/l}$ (as of September 1, 2011), respectively... This Order identifies Plains All American Pipeline, L.P. as the entity suspected of being responsible for the discharges of waste identified in paragraph 3, because you own or operate pipelines within the vicinity of Golden Avenue.*"

Plains identified 7 line segments within the one-mile radius CWC Order investigation area. The line segments are 8H, 52E, 63V, 93N, 93G, 514A, and 515A. To our knowledge all line segments have historically only been in crude oil service, and the active ones continue to remain only in crude oil service. This is in contrast to what, based on the site contamination observed, appears to be the source of the contamination at the subject site – a refined fuel, such as gasoline.

Of the 7 line segments only segment, 52E, is in the immediate vicinity of the investigation location. A review of the status of the line shows it to have been purged and out of service (OOS) for at least the last 12 years. The line was never operated by PAA or the immediate previous owner, Pacific Pipeline System, LLC. However, PAA continues to maintain cathodic protection & conduct annual surveys on the line, and also routinely rides the line to monitor the activities & area around the pipeline. To the best of our knowledge there has been no evidence of a leak or a failure of this line.

All the remaining (active) lines continue to be periodically evaluated as part of the PAA integrity management program, with none having failed any integrity testing.

Attached please find the pertinent records requested by this order, including a tabular pipeline inventory of the lines within a one-mile radius of the subject location with the following information:

PLAINS PIPELINE RWQCB Technical Report - Pipeline Inventory Response Baker-Golden Streets 03-02-12.doc

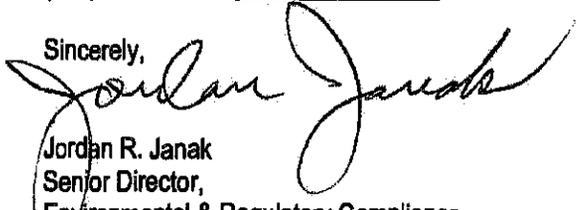
5900 Cherry Avenue • Long Beach, CA 90805-4408 • (562) 728-2800 • FAX (562) 728-2860

- a) ID No.
- b) Owner ID (name or identification number used by the pipeline owner)
- c) Current Owner (name of company currently owning the pipeline)
- d) Ownership History (list of all companies that ever owned the pipeline with years of ownership noted parenthetically)
- e) Size (pipeline diameter in inches)
- f) Material (material used for construction of pipeline - e.g., steel)
- g) Product" (list of all products ever transported through the pipeline with years of transport for each product noted parenthetically)
- h) Oxygenates (list of all fuel oxygenates ever transported through the pipeline with years of transport for each oxygenate noted parenthetically)
- i) Status (active or inactive)
- j) Integrity Test Failures) (indicate "yes" or "no" to indicate if the pipe line has failed any integrity tests within one mile of the Dominguez Channel and Carson Street)
- k) Contact (name, company name, address, telephone number, and e-mail address for the pipeline contact)
- l) Notes (any other relevant information regarding the pipeline)
- m) Source (source(s) of information describing the pipeline)

"I, Jordan Janak, certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is; to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations."

If you have any questions, or need additional information, please contact Ngibi Gicuhi of my staff at (562) 728-2024 or ngicuhi@paaip.com.

Sincerely,



Jordan R. Janak
Senior Director,
Environmental & Regulatory Compliance
Plains All American Pipeline, L.P.

ATTACHMENTS:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CWC 13267 ORDER

ORDER NO. R4-2012-0010



California Regional Water Quality Control Board Los Angeles Region



Matthew Rodriguez
Secretary for
Environmental Protection

320 West Fourth Street, Suite 200, Los Angeles, California 90013
(213) 576-6600 • FAX (213) 576-6640
<http://www.waterboards.ca.gov/losangeles>

Edmund G. Brown Jr.
Governor

January 13, 2012

Mr. Richard Hartig
Plains All American Pipeline, L.P.
5900 Cherry Avenue
Long Beach, CA 90623

**SUBJECT: REQUIREMENT FOR TECHNICAL REPORT ON PIPELINE INVENTORY –
PURSUANT TO CALIFORNIA WATER CODE SECTION 13267 ORDER NO.
R4-2012-0010**

SITE/CASE: NEAR 712 BAKER STREET, LONG BEACH, CALIFORNIA

Dear Mr. Hartig:

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is the public agency with primary responsibility for the protection of groundwater and surface water quality for all beneficial uses within major portions of Los Angeles and Ventura counties, including the referenced Site. To accomplish this, the Regional Board oversees the investigation and cleanup of discharges of waste adversely affecting the State's water, authorized by the Porter-Cologne Water Quality Control Act (California Water Code [CWC], Division 7).

Under the oversight of this Regional Board and the Long Beach Health and Human Services Department, Oil Operators Incorporated (OOI) has been conducting environmental investigation and cleanup at its property located at 712 Baker Street, Long Beach. The OOI property covers approximately 20 acres and is located south of the 405 Freeway, east of the 710 Freeway and the Los Angeles River, in the City of Long Beach. It is bounded on the south by Wardlow Road and on the east by Golden Avenue. A residential development is present to the east of the property, across Golden Avenue.

Recent site assessment activities conducted at the vicinity of the subject location reveal elevated volatile organic and/or petroleum compounds in soil vapor and groundwater, mainly along Golden Avenue where your company, allegedly, owns and operate a pipeline. The detected contaminants in the soil vapor include total petroleum hydrocarbons or TPH (C5-C11) and benzene, among others, in concentrations up to 55,000 micrograms per liter ($\mu\text{g}/\text{l}$) and 390 $\mu\text{g}/\text{l}$, respectively. The elevated contaminants in groundwater appear to coincide with the soil vapor plume, including benzene and 1,2-dichloroethane (1,2-DCA) in concentrations up to 1,700 and 13 $\mu\text{g}/\text{l}$, respectively.

In order to determine the source of the detected contaminants and to protect human health and the waters of the state for their beneficial uses, an inventory of pipelines and the layout locations is needed in the vicinity of Golden Avenue.

California Environmental Protection Agency

Mr. Richard Hartig
Plains All American Pipeline, L.P.

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January 13, 2012

Enclosed is a Regional Board Order No. R4-2012-0010 requiring, pursuant to section 13267 of the CWC, that you provide this Regional Board with information regarding pipelines operated by your company or any affiliated companies for which you may have access to records in the vicinity of the Site.

Should you have any questions, please contact Mr. Pinaki R. Guha-Niyogi, of my staff at (213) 576-6731 (pguha@waterboards.ca.gov).

Sincerely,

for Paul Rasmussen
Samuel Unger, P.E.
Executive Officer

cc: Councilman James Johnson, City of Long Beach
Ms. Tracy Barreau, California Department of Public Health
Ms. Donna DiRocco, BP Pipelines (North America) Inc./Atlantic Richfield Company
Ms. Joan Greenwood, Wrigley Area Neighborhood Alliance
Mr. George B. Paspalof, Brycon LLC
Ms. Carmen Piro, City of Long Beach, Health and Human Services Department
Ms. Marylyn C. Underwood, California Department of Public Health



Matthew Rodriguez
Secretary for
Environmental Protection

California Regional Water Quality Control Board Los Angeles Region

320 West Fourth Street, Suite 200, Los Angeles, California 90013
(213) 576-6600 • FAX (213) 576-6640
<http://www.waterboards.ca.gov/losangeles>



Edmund G. Brown Jr.
Governor

REQUIREMENT TO PROVIDE A TECHNICAL REPORT ON PIPELINE INVENTORY CALIFORNIA WATER CODE SECTION 13267 ORDER NO. R4-2010-0010

DIRECTED TO PLAINS ALL AMERICAN PIPELINE, L.P.

PIPELINES IN THE VICINITY OF GOLDEN AVENUE AND BAKER STREET LONG BEACH, CALIFORNIA

The Regional Water Quality Control Board, Los Angeles Region (Regional Board) makes the following findings and issues this Order pursuant to California Water Code section 13267.

1. Under the oversight of this Regional Board and the Long Beach Health and Human Services Department, Oil Operators Incorporated (OOI) has been conducting environmental investigation and cleanup at its property located at 712 Baker Street, Long Beach. The OOI property covers approximately 20 acres and is located south of the 405 Freeway, east of the 710 Freeway and the Los Angeles River, in the City of Long Beach. It is bounded on the south by Wardlow Road and on the east by Golden Avenue. A residential development is present to the east of the property, across Golden Avenue.
2. California Water Code section 13267(b) states, in part: In conducting an investigation. . . , the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or, discharging, or who proposes to discharge waste within its region . . . shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
3. The Regional Board has evidence from recent site assessment activities conducted at the vicinity of the subject location that indicate that there is or has been a discharge of waste from the site. The evidence supporting this requirement is that elevated volatile organic and/or petroleum compounds in soil vapor and groundwater have been identified, mainly along the Golden Avenue where Plains All American Pipeline, L.P., allegedly, owns and operates a pipeline. The detected contaminants in the soil vapor include total petroleum hydrocarbons or TPH (C5-C11) and benzene, among others, in concentrations up to 55,000 micrograms per liter (mg/l) and 390 mg/l, respectively. The elevated contaminants in groundwater appear to coincide with the soil vapor

California Environmental Protection Agency

plume, including benzene and 1,2-dichloroethane (1,2-DCA) in concentrations up to 1,700 and 13 mg/l (as of September 1, 2011), respectively.

4. This Order identifies Plains All American Pipeline, L.P. as the entity suspected of being responsible for the discharges of waste identified in paragraph 3, because you own or operate pipelines within the vicinity of Golden Avenue.
5. This Order requires the persons named herein to prepare and submit technical and/or monitoring reports to identify locations of the pipelines.
6. The burdens, including costs, of these reports bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The information is necessary to identify the sources of waste detected in the soil and groundwater beneath the Golden Avenue, Long Beach and to protect human health and the waters of the state.
7. The issuance of this Order is an enforcement action by a regulatory agency and is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to section 15321(a)(2), Chapter 3, Title 14 of the California Code of Regulations. This Order requires submittal of technical and/or monitoring reports that will not have adverse impacts on the environment.
8. Any person aggrieved by this action of the Regional Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must *receive* the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

THEREFORE, IT IS HEREBY ORDERED that Plains All American Pipeline, L.P., pursuant to section 13267(b) of the California Water Code, is required to submit the following:

1. By **March 6, 2012**, an inventory of all pipelines ever owned or operated by your company or any affiliated company that you are able to reasonably obtain records from that are located within one mile of the intersection of Baker Street and Golden Avenue in Long Beach, California. The inventory shall be in tabular format containing the following columns:
 - a. ID No. (sequentially from 1: e.g., 1, 2, 3, ...)
 - b. Owner ID (name or identification number used by the pipeline owner)
 - c. Current Owner (name of company currently owning the pipeline)
 - d. Ownership History (list of all companies that ever owned the pipeline with years of ownership noted parenthetically)
 - e. Size (pipeline diameter in inches)
 - f. Material (material used for construction of pipeline -- e.g., steel)

- g. Product (list of all products ever transported through the pipeline with years of transport for each product noted parenthetically)
- h. Oxygenates (list of all fuel oxygenates ever transported through the pipeline with years of transport for each oxygenate noted parenthetically)
- i. Status (active or inactive)
- j. Integrity Test Failures¹ (indicate "yes" or "no" to indicate if the pipeline has failed any integrity tests within one mile of the Dominguez Channel and Carson Street)
- k. Contact (name, company name, address, telephone number, and e-mail address for the pipeline contact)
- l. Notes (any other relevant information regarding the pipeline)
- m. Source (source(s) of information describing the pipeline)

The inventory shall be accompanied by a scaled map clearly identifying the location of each identified pipeline.

Item l shall be e-mailed to:

Mr. Pinaki Guha-Niyogi
Case Manager
Regional Water Quality Control Board -- Los Angeles Region
320 W. 4th Street, Los Angeles, CA 90013
(213) 576-6727
pguha@waterboards.ca.gov

The technical report is required to be submitted under the CWC section 13267 Order. Pursuant to 13267(a) of the CWC, any person who fails to submit reports in accordance with the Order is guilty of a misdemeanor. Pursuant to section 13268(b)(1) of the CWC, failure to submit the required technical report described above by the specified due date(s) may result in the imposition of administrative civil liability by the Regional Board in an amount up to one thousand dollars (\$1,000) per day for each day the technical report is not received after the above due date. These civil liabilities may be assessed by the Regional Board for failure to comply, beginning with the date that the violations first occurred, and without further warning.

The Regional Board, under the authority given by California Water Code (CWC) section 13267, subdivision (b)(1), requires you to include a perjury statement in all reports submitted under the 13267 Order. The perjury statement shall be signed by a senior authorized Plains All American Pipeline, L.P. representative (not by a consultant). The perjury statement shall be in the following format:

"I, [NAME], certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision, in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief,

¹ If a pipeline has failed an integrity test, indicate when the integrity test failed, provide a description of the integrity test methodology, and indicate what product was transported in the pipeline both immediately prior to the integrity test failure and immediately following its failure (if the pipeline was returned to service).

Mr. Richard Hartig
Plains All American Pipeline, L.P.

- 4 -

January 13, 2012

true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

The State Water Resources Control Board (State Water Board) adopted regulations requiring the electronic submittals of information over the Internet using the State Water Board GeoTracker data management system. You are required not only to submit electronic copy reports required in this Order, but also to comply by uploading all reports and correspondence prepared to date on to the GeoTracker data management system. The text of the regulations can be found at the URL:

http://www.waterboards.ca.gov/ust/electronic_submittal

SO ORDERED.

for Paul Rasmussen
Samuel Unger, P.E.
Executive Officer

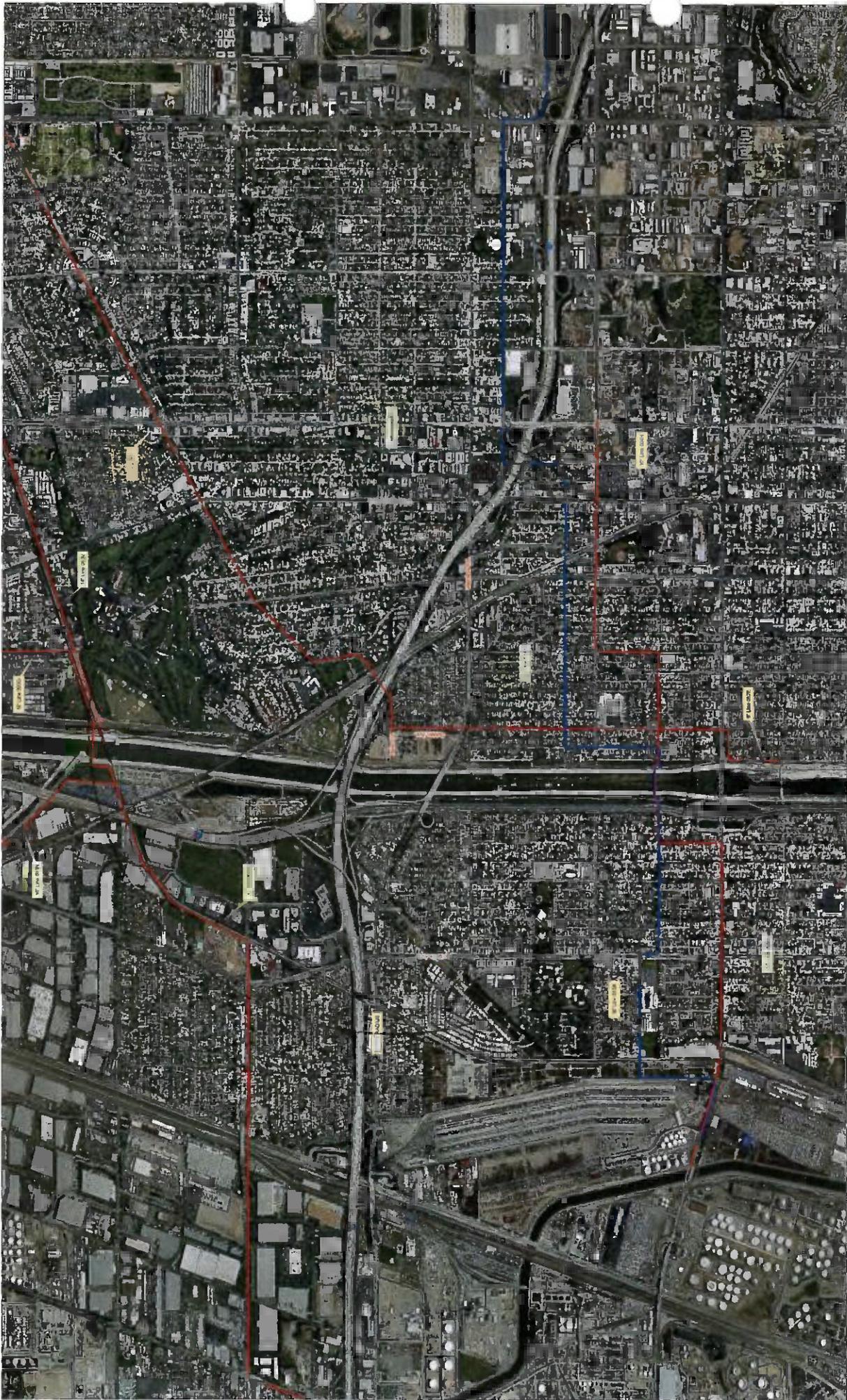
**PLAINS ALL AMERICAN PIPELINE
TABULAR PIPELINE INVENTORY
WITHIN A ONE-MILES RADIUS OF THE INTERSECTION OF
BAKER STREET & GOLDEN AVENUE**

ORDER No. 84-2022-0010
 BAKER STREET GOLDEN AVENUE INVESTIGATION

ID NO. ID NUMBER	OWNER ID LINE NAME	CURRENT OWNER OWNER	OPERATOR NAME OPER. NMA	PREVIOUS OWNER PREV. OP	PREVIOUS OWNER PREV. OP	DIAMETER (INCHES) DIAMETER	MATERIAL	PRODUCT COMTY_DESC	OXIDIZATES	STATUS STATUS_CODE	INTEGRITY TEST FAILURES (Y/N)	CONTACT	NOTES - CSFM NO. SOURCE(S)
-	1008 REDONDO VALVE BOX TO CHEMOK LINE - 10" - 18" - 2	PLAINS PIPELINE LP (2005-CURRENT)	PACIFIC PIPELINE SYSTEM, LLC (1899-2005)	PACIFIC PIPELINE SYSTEM, LLC (1899-2005)	ARCO/BP (2-1899)	10	CARBON STEEL	CRUDE OIL	NONE	INACTIVE	N		0107
-	1052 BP LA REFINERY TO EAST HYNES - 6" - 18" - 2	PLAINS PIPELINE LP (2005-CURRENT)	PACIFIC PIPELINE SYSTEM, LLC (1899-2005)	PACIFIC PIPELINE SYSTEM, LLC (1899-2005)	ARCO/BP (2-1899)	6	CARBON STEEL	CRUDE OIL	NONE	INACTIVE	N		0214
063V	1063 LA PUMP STA TO BP LOS ANGELES REF 14"	PLAINS PIPELINE LP (2005-CURRENT)	PACIFIC PIPELINE SYSTEM, LLC (1899-2005)	PACIFIC PIPELINE SYSTEM, LLC (1899-2005)	ARCO/BP (2-1899)	14	CARBON STEEL	CRUDE OIL	NONE	ACTIVE	N	Najabi Gicuh, Environmental Engineer, 562-728-2024, ngicuh@psalp.com	0125
098F-G,J,K,L,N	1098 WEST HYNES TO EL SEGUNDO EAST 16"	PLAINS PIPELINE LP (2005-CURRENT)	PACIFIC PIPELINE SYSTEM, LLC (1899-2005)	PACIFIC PIPELINE SYSTEM, LLC (1899-2005)	EDISON PIPELINE TERMINAL COMPANY (EPTC) (2-2003)	16	CARBON STEEL	CRUDE OIL	NONE	ACTIVE	N		0104
514A	(1514A) 1513-517 CERRITOS TO EL REAL - 16"	PLAINS MARKETING LP (2005-CURRENT)	PLAINS MARKETING LP	PACIFIC TERMINALS (2003-2005)	EDISON PIPELINE TERMINAL COMPANY (EPTC) (2-2003)	16	CARBON STEEL	CRUDE OIL	NONE	ACTIVE	N		0886
515A	(1515A) 1513-517 CERRITOS TO EL REAL - 16"	PLAINS MARKETING LP (2005-CURRENT)	PLAINS MARKETING LP	PACIFIC TERMINALS (2003-2005)	PACIFIC TERMINALS (2003-2005)	16	CARBON STEEL	CRUDE OIL	NONE	ACTIVE	N		0386

Plains Pipeline Inventory Database.

SCALED MAP OF THE SUBJECT AREA



BAKER STREET & GOLDEN AVENUE
LONG BEACH, CA
Scale: 1:110,000
Sheet No.: 1/1

Appendix C

BP Line 32 SCAQMD 1166 Monitoring (November 2011)



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 90765-4178
(909) 396-2000 • www.aqmd.gov

Form Ret # 288281
BP Line 32 ILE Repair
Golden/32nd street
Long Beach

PLAN ISSUE DATE

July 22, 2011

APPROVAL SIGNATURE

Darold Jones
Darold Jones
A.Q.A.C. Supervisor

COMPANY I.D.:

155820

Mitigation Plan/Application No.

525316

Applicant:

ARB, Inc.
26000 Commercenter Drive
Lake Forest, CA 92630

Attention:

Darryl Oscars

Phone

(949) 454-7108

Fax (949) 595-5544

Transmitted to AQMD by 1/6/12

**VARIOUS LOCATIONS
RULE 1166 CONTAMINATED SOIL MITIGATION PLAN**

Reference is made to your application (A/N 483913) for the excavation and handling of VOC-contaminated soil at various locations within the South Coast Air Quality Management District.

In accordance with Rule 1166 (c), this approved plan is required prior to commencing excavation of any areas, sites, or locations which has previously been used to store or transfer volatile organic compounds (VOC) or during the excavation, handling, or storage of VOC-contaminated soils.

The rights and privileges granted through the issuance of this plan are restricted exclusively to the plan holder to whom it was issued, and are non-transferable, even with the written or expressed consent of the plan holder listed above.

A VARIOUS LOCATIONS PLAN can be used at a site to excavate and remove a maximum of 2000 cubic yards of VOC contaminated soil at the site. Any treatment or additional excavation of VOC contaminated soil at the site will require the issuance of a SITE SPECIFIC plan by the AQMD. Multiple use of VARIOUS LOCATIONS PLANS to excavate over 2000 cubic yards of contaminated soil for the same site is prohibited per Rule 1166.

This excavation and mitigation plan has been approved under the provisions of Rule 1166 of the Rules and Regulations of the AQMD and is subject to the following conditions.

**THIS PLAN WILL EXPIRE ONE YEAR FROM THE ISSUE DATE AND
THERE IS NO AUTOMATIC RENEWAL PROCESS.**

All Various Locations Plans expire one (1) year from the date of issuance. To apply for a new Plan, submit an Application with the filing fee at least one month prior to the Plan expiration date. For an application package and fee information please go the SCAQMD web page at <http://www.aqmd.gov/comply/formsbyrule.htm> and look for Rule 1166 information. For questions call 909-396-2326."

PLAN CONDITIONS

SECTION I - GENERAL REQUIREMENTS

1. A SIGNED COPY OF THIS PLAN SHALL BE PRESENT AT EACH EXCAVATION SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.
2. THIS PLAN IS NOT VALID FOR THE EXCAVATION OF VOC CONTAMINATED SOILS AT LANDFILLS OR SITES USED FOR DISPOSAL OF REFUSE OR OTHER TYPES OF WASTE.
3. THIS PLAN DOES NOT ALLOW THE TREATMENT OF VOC-CONTAMINATED SOIL BY THERMAL, CHEMICAL, OR MECHANICAL PROCESSES. ANY OF THE ABOVE TREATMENT PROCESSES REQUIRES A PERMIT TO OPERATE FROM THE AQMD AND A SITE-SPECIFIC RULE 1166 PLAN.
4. THIS PLAN DOES NOT ALLOW BACK-FILLING OF TREATED VOC CONTAMINATED SOIL. BACK-FILLING OF TREATED VOC CONTAMINATED SOIL MAY BE ALLOWED UNDER A SITE SPECIFIC RULE 1166 PLAN.
5. A). THE TOTAL QUANTITY OF VOC CONTAMINATED SOIL EXCAVATED AND HANDLED AT EACH SITE SHALL NOT EXCEED 2,000 CUBIC YARDS. THIS TOTAL INCLUDES ANY VOC CONTAMINATED SOILS EXCAVATED FROM THIS LOCATION UNDER A VARIOUS LOCATION PLAN WITHIN THE LAST TWELVE (12) CALENDAR MONTHS. EXCAVATIONS INVOLVING QUANTITIES IN EXCESS OF 2000 CUBIC YARDS OF VOC CONTAMINATED SOIL REQUIRES THE APPLICATION SUBMITTAL FOR A SITE SPECIFIC RULE 1166 EXCAVATION PLAN.
6. THE AQMD SHALL BE IMMEDIATELY NOTIFIED OF ANY COMPLAINTS RECEIVED AS A RESULT OF ACTIVITIES CONDUCTED UNDER THIS PLAN. SUCH NOTIFICATION SHALL INCLUDE THE NATURE OF THE COMPLAINT, NUMBER OF COMPLAINANTS AND THE ACTION TAKEN BY THE PLAN HOLDER TO MITIGATE THE SOURCE OF THE COMPLAINT.
7. DURING EACH STEP OF THE PROCESS UP TO AND INCLUDING THE REMOVAL AND DISPOSAL PROCESS, ALL PRECAUTIONS AND MEASURES SHALL BE TAKEN TO MINIMIZE THE RELEASE OF VOC, ODOR AND DUST. THIS INCLUDES BUT IS NOT LIMITED TO: THE USE OF ADDITIONAL PLASTIC SHEETING ON STOCKPILES, USE OF SUPPRESSANTS ON EXPOSED SOIL SURFACES & WORK AREAS AND MAINTAINING PAVED PUBLIC STREETS FREE OF SOIL DEPOSITS.
8. FOR THE PURPOSES OF RULE 1166 AND THIS PLAN, SOIL MEASURED PURSUANT TO RULE 1166 AS VOC CONTAMINATED SOIL, IS CONSIDERED AS VOC CONTAMINATED SOIL FROM THE TIME OF MEASUREMENT ONWARD, UNTIL THE SOIL IS TREATED PURSUANT TO AN APPROVED AQMD TREATMENT PROCESS.

SECTION II - PRIOR TO EXCAVATION

9. AT LEAST 24 HOURS PRIOR TO COMMENCING EXCAVATION OR GRADING OF SOIL AT THE SITE, THE EXECUTIVE OFFICER OR DESIGNEE SHALL BE NOTIFIED OF THE EXCAVATION BY FAX USING A FORM APPROVED BY THE EXECUTIVE OFFICER WHICH IS FULLY COMPLETED AND INCLUDING, THE NAME OF THE COMPANY PERFORMING THE EXCAVATION, AND THE APPLICATION NUMBER LISTED ON THIS MITIGATION PLAN. THE NOTIFICATION SHALL BE MADE BY FAXING THE NOTIFICATION FORM AT (909) 396-3342. FAX NOTIFICATIONS WILL RECEIVE A REFERENCE NUMBER BY RETURN FAX OR CAN BE OBTAINED REFERENCING THE FAX NOTIFICATION BY PHONE TUESDAY THROUGH FRIDAY DURING BUSINESS HOURS AT 909 396-2326. THE REFERENCE NUMBER SHALL BE RETAINED AS PROOF OF COMPLIANCE WITH THIS REQUIREMENT.

REFERENCE NO: 288261 NOTIFICATION DATE: 10/20/11

10. COMPLETE VERIFICATION INFORMATION IN CONDITION NO. 30 AND OBTAIN REQUIRED SIGNATURES, PRIOR TO COMMENCING EXCAVATION.

SECTION III - MONITORING

11. DURING THE EXCAVATION PROCESS, AN ORGANIC VAPOR ANALYZER (OVA) SHALL BE ON SITE AT ALL TIMES. THE OVA SHALL BE MAINTAINED IN GOOD WORKING ORDER AT ALL TIMES AND SHALL BE CALIBRATED BY THE MANUFACTURER AT LEAST ONCE EVERY THREE MONTHS. THE CALIBRATION OF THE OVA SHALL BE VERIFIED USING CERTIFIED CALIBRATION GAS AT THE BEGINNING OF EACH WORKING DAY WITH THE PROCEDURES SPECIFIED BY THE MANUFACTURER. IF A CALIBRATION GAS OTHER THAN HEXANE IS USED, EACH MEASURED READING SHALL BE CORRELATED TO AND EXPRESSED AS HEXANE, USING EQUIVALENCY FACTORS PROVIDED BY THE MANUFACTURER.
12. ALL MONITORING SHALL BE CONDUCTED AT A DISTANCE NO MORE THAN 3 INCHES ABOVE THE SOIL SURFACE USING AN OVA DESCRIBED IN CONDITION NO. 11 ABOVE. MONITORING SHALL BE CONDUCTED AT A MINIMUM FREQUENCY OF ONE READING FOR EVERY TWO CUBIC YARDS OF SOIL EXCAVATED, NOT TO EXCEED FIFTEEN MINUTES BETWEEN READINGS. ALL READINGS SHALL BE TAKEN NO LATER THAN THREE (3) MINUTES AFTER EACH LOAD OF SOIL IS EXCAVATED.
13. ALL MONITORING SHALL BE CONDUCTED BY TRAINED PERSONNEL WHO ARE PROFICIENT IN THE USE OF THE HYDROCARBON MONITOR SELECTED FOR USE AT THIS SITE.
14. WRITTEN RECORDS OF OVA MONITORING AND CALIBRATIONS REQUIRED ABOVE SHALL BE KEPT IN A FORMAT APPROVED BY THE AQMD. THE APPROVED FORMAT IS INCLUDED ON PAGE 7 OF THIS PLAN. THE CERTIFICATION ON ALL RECORDS SHALL BE SIGNED AND DATED ON THE DAY THE MEASUREMENTS ARE OBSERVED.
15. UPON DETECTION OF VOC CONTAMINATED SOIL (READINGS 50 PPM OR GREATER), THE EXECUTIVE OFFICER OR DESIGNEE SHALL BE NOTIFIED WITHIN 24 HOURS OF THE FIRST DETECTION OF VOC CONTAMINATION. THE NOTIFICATION SHALL BE MADE BY FAXING THE NOTIFICATION FORM TO (909) 396-3342 OR CALLING (909) 396-2326. A REFERENCE NUMBER WILL BE FAXED BACK OR WILL BE ISSUED WHEN THE PHONE NOTIFICATION IS RECEIVED. ALL PHONE NOTIFICATIONS SHALL BE FOLLOWED BY MAILING THE NOTIFICATION FORM TO THE DISTRICT POSTMARKED WITHIN 48 HOURS. THE REFERENCE NUMBER WILL BE RETAINED AS PROOF OF COMPLIANCE WITH THIS REQUIREMENT.

REFERENCE NO: _____ NOTIFICATION DATE: _____

SECTION IV - HANDLING AND STORAGE

16. ALL VOC-CONTAMINATED SOIL BELOW 1000 PPM SHALL BE STOCKPILED, COVERED WITH PLASTIC SHEETING AND STORED SEPARATELY FROM NON-VOC-CONTAMINATED SOIL, OR IMMEDIATELY TRANSPORTED TO A TREATMENT FACILITY.
17. A STOCKPILE SHALL NOT CONTAIN MORE THAN 400 CUBIC YARDS OF SOIL.
18. IF THE OVA MEASUREMENT IS GREATER THAN 50 PPMV BUT LESS THAN 1000 PPMV
 - A) THE AFFECTED WORK AREA AND LOAD OF SOIL SHALL BE SPRAYED WITH WATER AND/OR APPROVED VAPOR SUPPRESSANT.
 - B) CONTAMINATED SOIL IN STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING WHICH OVERLAP A MINIMUM OF TWENTY-FOUR INCHES AND ARE SECURED SO THAT NO PORTION OF THE CONTAMINATED SOIL IS EXPOSED TO THE ATMOSPHERE. IN THE COURSE OF HANDLING THE STOCKPILE, ONLY THE WORKING FACE OF THE STOCKPILE MAY BE UNCOVERED.
19. IF THE OVA MEASUREMENT EQUALS OR IS GREATER THAN 1000 PPM, STOP EXCAVATION TO NOTIFY THE DISTRICT IMMEDIATELY OR WITHIN ONE HOUR OF DETECTION AND,
 - A) THE AFFECTED SOIL AND WORKING AREA SHALL BE IMMEDIATELY SPRAYED WITH WATER OR AN APPROVED VAPOR SUPPRESSANT, AND EITHER:
 - B) THE CONTAMINATED SOIL EXCAVATED SHALL BE IMMEDIATELY PLACED IN AQMD APPROVED SEALED CONTAINERS, OR,
 - C) DIRECTLY LOADED IN TRUCKS, SPRAYED WITH ADDITIONAL WATER OR APPROVED VAPOR SUPPRESSANT, COVERED, AND TRANSPORTED IMMEDIATELY OFF SITE AS PER CONDITION #25 OF THIS PLAN, OR,
 - D) OTHER ALTERNATIVE STORAGE METHODS WITH PRIOR WRITTEN APPROVAL FROM THE AQMD.
20. DURING EXCAVATION, THE ONLY EXPOSED VOC CONTAMINATED SOIL SHALL BE RESTRICTED TO THE IMMEDIATE WORKING AREA OF THE SITE OR STOCKPILE. ALL OTHER PORTIONS OF THE STOCKPILE SHALL BE COVERED WITH PLASTIC SHEETING, WITH SEAMS, WHICH OVERLAP A MINIMUM OF TWENTY-FOUR INCHES AND ARE SECURED WITH DUCT TAPE. ANY EXPOSED VOC-CONTAMINATED SOIL SURFACES (WORK FACE) SHALL BE KEPT MOIST WITH WATER OR OTHER APPROVED SUPPRESSANTS AT ALL TIMES, AND SHALL BE RECOVERED DURING PERIODS OF INACTIVITY LONGER THAN ONE (1) HOUR. AT THE END OF EACH WORKING DAY, ALL STOCKPILES SHALL BE COMPLETELY COVERED AND SECURELY ANCHORED TO PREVENT ANY EXPOSURE OF SOIL TO THE ATMOSPHERE.
21. ONCE COVERED WITH PLASTIC SHEETING, STOCKPILES SHALL REMAIN UNDISTURBED UNTIL REMOVED FROM SITE.
22. DAILY INSPECTIONS SHALL BE CONDUCTED OF ALL COVERED VOC-CONTAMINATED STOCKPILES TO ENSURE THE INTEGRITY OF THE PLASTIC COVER. SUCH INSPECTIONS SHALL INCLUDE A VISUAL INSPECTION OF ALL SEAMS AND PLASTIC COVER SURFACES. ANY HOLES, TEARS OR ANY OTHER POTENTIAL SOURCES OF FUGITIVE VOC EMISSIONS SHALL BE REPAIRED IMMEDIATELY. DAILY RECORDS SHALL BE MAINTAINED TO ENSURE COMPLIANCE WITH THIS CONDITION.
23. VOC CONTAMINATED SOIL SHALL NOT BE SPREAD ON-SITE OR OFF-SITE. THIS INCLUDES ANY UNNECESSARY MOVEMENT OR AGITATION OF SOIL THAT MAY CAUSE THE UNCONTROLLED EVAPORATION OF VOC'S INTO THE ATMOSPHERE, INCLUDING THE RESHAPING OR RELOCATION OF STOCKPILES.

SECTION V - SOIL REMOVAL AND DISPOSAL

24. ALL EXCAVATED VOC-CONTAMINATED SOIL SHALL BE REMOVED FROM THE SITE WITHIN THIRTY (30) DAYS OF ITS EXCAVATION.
25. ALL VOC-CONTAMINATED SOIL REMOVED FROM THE SITE SHALL COMPLY WITH THE FOLLOWING:
 - A). BE TRANSPORTED TO AN APPROVED TREATMENT/DISPOSAL FACILITY. IT SHALL BE THE RESPONSIBILITY OF THE PLAN HOLDER TO ENSURE THAT THE RECEIVING TREATMENT/DISPOSAL FACILITY HAS RECEIVED APPROVAL FROM THE APPROPRIATE ENVIRONMENTAL OVERSIGHT AGENCIES TO HANDLE AND TREAT VOC CONTAMINATED SOILS.
 - B). WHEN LOADING IS COMPLETED AND DURING TRANSPORTATION, NO EXCAVATED MATERIAL SHALL EXTEND ABOVE THE SIDES OR REAR OF THE TRUCK OR TRAILER.
 - C). PRIOR TO COVERING/TARPING, LOADED CONTAMINATED SOIL SHALL BE WETTED BY SPRAYING WITH MIST INHIBITORS.
 - D). THE TRUCK OR TRAILER SHALL BE COMPLETELY COVERED/TARPED PRIOR TO LEAVING THE SITE TO PREVENT PARTICULATE EMISSIONS TO THE ATMOSPHERE.
 - E). THE EXTERIOR OF THE TRUCKS (INCLUDING THE TIRES) SHALL BE CLEANED OFF PRIOR TO THE TRUCKS LEAVING THE EXCAVATION SITE.

SECTION VI - RECORDS AND REPORTING

26. A WRITTEN REPORT SHALL BE PROVIDED TO THE AQMD WITHIN 40 DAYS OF INITIAL DETECTION OF CONTAMINATED SOIL, WHICH INCLUDES THE FOLLOWING INFORMATION.
 - A). THE STATUS OF THE EXCAVATION PIT, AND ANY VOC CONTAMINATED SOIL REMAINING ON SITE.
 - C). A BRIEF SUMMARY INDICATING IF ADDITIONAL CLEAN UP EFFORTS ARE NECESSARY, THE ADDITIONAL QUANTITY OF VOC CONTAMINATED SOILS TO BE EXCAVATED AND THE PROJECTED SCHEDULE OF THE EXCAVATION.
27. RECORDS OF DISPOSAL SHALL BE MAINTAINED FOR ALL VOC-CONTAMINATED SOIL REMOVED FROM THIS SITE. SUCH RECORDS SHALL BE CLEARLY LABELED "SCAQMD RULE 1166-VOC CONTAMINATED SOIL" AND SHALL INCLUDE THE IDENTIFICATION AND THE LOCATION OF, 1) THE GENERATOR, 2) TRANSPORTER AND 3) RECEIVING FACILITY. IN ADDITION, SUCH RECORDS SHALL BE SIGNED AND DATED BY EACH OF THE ABOVE PARTIES INDICATING RECEIPT OR RELINQUISHMENT OF THE VOC-CONTAMINATED SOIL AT THE TIME CUSTODY IS TRANSFERRED.
28. RECORDS OF DISPOSAL OF VOC-CONTAMINATED SOIL SHALL BE MAINTAINED ON SITE DURING THE EXCAVATION AND LATER MAINTAINED FOR A PERIOD OF TWO (2) YEARS. THE RECORDS SHALL BE MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.
29. WITHIN THIRTY (30) DAYS AFTER THE EXCAVATION AT THE SITE IS COMPLETED, THE WRITTEN RECORDS UNDER CONDITIONS NO. 14, 22, AND 27 SHALL BE SUBMITTED TO THE AQMD AT THE FOLLOWING ADDRESS.

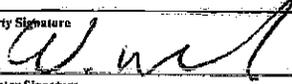
SOUTH COAST AIR QUALITY MGMT DISTRICT
ENGINEERING & COMPLIANCE DIVISION
TOXICS & WASTE MANAGEMENT UNIT
(RULE 1166 COMPLIANCE)
21865 E. COPLEY DR.
DIAMOND BAR, CA 91765-4182

SECTION VII – VERIFICATION AND SIGNATURE

30. THIS PLAN IS NOT VALID UNTIL ALL PARTIES HAVE REVIEWED AND SIGNED THE VERIFICATION STATEMENT BELOW.

Site Name BP PIPELINE NA, INC. (Line 32 ILLI Repair Site#4)		Type of Business N/A	
Address Golden Ave and 32 nd Street		City Long Beach	Zip 90806
Responsible Party (Owner/Operator) BP Pipeline NA		Phone (562) 499-2241	
Address 1300 Pier B St.		City Long Beach, CA	Zip 90813

I CERTIFY THAT I HAVE REVIEWED AND UNDERSTAND THE CONDITIONS CONTAINED WITHIN THIS PLAN. IN SIGNING BELOW, I ACKNOWLEDGE THAT UNDER THE PROVISIONS OF RULE 1166, I CAN BE HELD RESPONSIBLE FOR THE REQUIREMENTS SET FORTH IN THIS PLAN.

Responsible Party BP Pipeline NA Inc	Responsible Party Signature 	Date Signed 11/22/11
General Contractor ARB INC.	General Contractor Signature 	Date Signed 11/22/11
Excavation Contractor ARB INC.	Excavation Contractor Signature 	Date Signed 11/22/11
Environmental Consultant ARB INC.	Environmental Consultant Signature 	Date Signed 11/22/11

DEFINITIONS

Excavation	Is the process of digging out and removing materials including any material necessary to that process such as the digging out and removal of asphalt or concrete necessary to expose, dig out and remove known VOC contaminated soil
Organic Vapor Analyzer (OVA)	For the purposes of this plan, an OVA is an hydrocarbon monitor utilizing flame ionization, photo ionization or other analytical methods complying with 40 CFR PART 60 APPENDIX A, EPA METHOD 21 SECTION 3, "DETERMINATION OF VOLATILE ORGANIC COMPOUND LEAKS, MONITORING INSTRUMENT SPECIFICATIONS. The monitor shall be capable of being calibrated using hexane at a range of 0 parts per million by volume (PPMV) to 50 PPMV, and at a detection range of at least 30 PPMV to 1100 PPMV
Responsible Party	For the purposes of this plan, Responsible Party is the party financially responsible for initiating the excavation. This may include the property owner or the tank operator. This excludes contractors working for the property owner or operator, and any other party that lacks the direct authority to immediately treat all VOC contaminated soils generated at the excavation site.
VOC Contaminated Soil	Is soil that registers a concentration of 50 PPM or greater of volatile organic compounds as measured before suppression materials have been applied and at a distance of no more than three inches from the surface of the excavated soil with an organic vapor analyzer calibrated with hexane.
Volatile Organic Compound (VOC)	Is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds. Exempt compounds areas defined in Rule 102 – Definitions of Terms.

Once issued, this plan is subject to further review by the AQMD and may be revoked if excavation activities are found in violation of plan conditions or AQMD's Rules and Regulations. Failure to comply with one or more of the conditions contained within this plan constitutes a violation of Rules 221 and 1166.

Other governmental agencies may require approval before any excavation begins. It shall be the responsibility of the applicant to obtain that approval. The South Coast Air Quality Management District shall not be responsible or liable for any losses because of measures required or taken pursuant to the requirements of this approved Rule 1166 Contaminated Soil Mitigation Plan.

Questions regarding this plan should be directed to Ranjit Vishwanath at (909) 396-2682.

Rv11/17/04



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765

1-800-CUT-SMOG www.aqmd.gov

July 1, 2011

IMPORTANT NOTICE 2011 Rules 203, 1149 and 1166 Fees

TO COMPANIES AND CONTRACTORS THAT:

- Operate portable soil/vapor extraction units at a location for 5 days or more (Rule 203)*
- Degas storage tanks known/suspected to contain Volatile Organic Compounds (VOC) (Rule 1149)*
- Remove tanks or transfer piping known/suspected to contain VOC (Rule 1166)*
- Handle, excavate, grade, monitor or treat soil known/suspected to contain VOC (Rule 1166)*

SCAQMD Regulation III - Fee amendments for the Fiscal Years 2011-2012 increased notification fees 1.4 percent (%) across-the-board. All required notifications for soil vapor extraction projects, tank degassing projects, and excavation of VOC soil projects, are subject to the new fee per Rule 301(x) effective July 1st, 2011. See fee schedule below:

2011-2012	\$53.89
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The fee is per notification and an additional service charge fee of \$25.00 may apply for any returned check per Rule 313(i).

Initial notifications must be faxed to 909-396-3342 and the original notification and fee must be postmarked within 48 hours of the fax time.

AQMD recommends mailing your notification to save time, money, reduce traffic, conserve energy use and avoid air pollution. *For your convenience please mail all notifications and fees to the following mailing address:*

**SCAQMD R203/1149/1166 Notifications,
FILE # 55641,
Los Angeles, CA 90074-5641**

Notifications should be completed, signed, mailed and the fee paid by the contractor performing the project. Notifications submitted without a fee are deemed incomplete and they will be returned to sender and referred to the Air Toxics Compliance Unit.

Rules 203, 1149 and 1166 notification forms, instructions, and information can be obtained from the SCAQMD web site at <http://www.aqmd.gov>

The forms are located at our home page, click on Business / Compliance Program / Recordkeeping and Reporting Forms or the Rule link below.

- 203 Soil Vapor Extraction (SVE) Notification Form
- 1166 VOC Emissions From Soil Excavation Notification Form
- 1149 Storage Tank Degassing Notification Form

For any Rule 203/1149/1166 questions call the above Rules Hot Line at (909) 396-2326.

NOTE: Rule 304(e) requires an owner operator to pay for analysis of AQMD field samples showing non compliance.

Rule 203 and Rule 1166 Form Notification Instructions

Use this form to notify of operation of a Soil Vapor Extraction unit (SVE) at any site for more than 5 days per permit condition (R203); or for notifying about R1166 projects prior to excavating soil that is known or suspected to contain Volatile Organic Compounds (VOC), VOC tank excavation, discovering the presence of > 50 ppm and 1000 ppm VOC contaminated soil during soil excavation, or to notify of onsite VOC contaminated soil mitigation or treating. For questions check our website at www.aqmd.gov or call the Hotline at (909) 396-2326

NOTIFICATION FEES: Per Rule 301(x) any person required to submit a notification per Rule 1166 projects or Rule 203 - Soil Vapor Extraction projects must pay a notification fee per notification.

FAX all notifications to (909) 396-3342 and then **MAIL** the form and fee within 48 hours of fax to:

SCAQMD Rule 1166 / 203 Notifications, File # 55641, Los Angeles, CA 90074-5641

Notifications must include the following **MANDATORY** information:

Faxback # - Provide your fax # at the top of the Notification Form if you want a Reference # faxed back to you.

Notification Type - **CIRCLE** the type of Notification. Original is for new or initial Notifications. Revisions are for updating information on notifications in which the project End Date has not expired. Provide the most recent prior Reference # issued for Revisions or Cancellations.

Project Type - **CIRCLE** the type of work you are submitting a notification for. A separate notification and fee is required for each type of work selected.

Mitigation Plan/Permit - Each Project Type requires a valid R1166 Mitigation Plan or SVE Permit # (important).

Site Contractor Information - Provide the information for the actual contractor *doing the work*. The AQMD ID #, also known as Company or Facility ID #, can be found on the contractor's AQMD Mitigation Plan, Permits or Invoices.

Site Information - Provide the site name and complete address. Include the street number and name, city, zip code, and nearest cross street. Give more detailed directions for site(s) difficult to locate.

Project Dates - Provide the project Start and End Dates. Any changes will require a Revision notification.

Tank Information - For R1166 tank excavation specify the tank capacity, the VOC material stored in the tank, and if the tank is above ground (a/g) or underground (u/g).

Information Certification - The notification must be signed and dated by the contractor doing the work or authorized representative to confirm that the information provided is complete and accurate.

SOIL/TANK EXCAVATION NOTIFICATION Rule 1166(c)(1)(B) Notify 24 hours prior of intent to Excavate known or suspected VOC storage and/or transfer equipment (includes diesel and waste oil tanks); or *handling* known or suspected VOC contaminated soil. **NOTE:** Soil excavation > 5,000 cubic yards may require a R403 Fugitive Dust Plan.

DETECTING/FINDING VOC SOIL NOTIFICATION - Rule 1166(c)(1)(D)(ii) Notify of finding VOC contaminated soil

- within 1 hour of detecting VOC greater than 1000 ppm*
- within 24 hours of detecting VOC greater than 50 ppm
- within 1 hour of an excavation due to a breakdown requiring a Rule 430 notification to SCAQMD

EMERGENCY NOTIFICATION Rule 1166(c)(1)(B) Notify prior to start work of any incident declared an emergency by an authorized agency requiring immediate tank removal/repairs or excavating/handling known or suspected VOC soil:

- Call 1-800-CUT-SMOG prior to excavating or fax the emergency notification to 909-396-3342 and
- Mail the notification within 48 hours after the excavation including the agency Order or Declaration.

SOIL VAPOR EXTRACTION NOTIFICATION (SVE - Rule 203 *) Notify upon the 5th day after operating at a new site: Notifying of *start-up* or *testing* of operation of portable Soil Vapor Extraction equipment lasting 5 days or more. Provide the distance in feet to the nearest sensitive receptor if the site is located less than ¼ mile from any Long-Term Health Care Facility, Rehabilitation Center, Convalescent Center, Retirement Home, Residence, School, Playground, Child Care Center or Athletic Facility (* See your SVE permit condition requirements).

MITIGATION/TREATING VOC SOIL NOTIFICATION (Rule 203 *) Notify per Permit condition requirements when: Notifying of on-site *mitigation* or *treating* of VOC contaminated soil (* See your Permit condition requirements).



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SVE Operation (R203) or Rule 1166 NOTIFICATION FORM

Use this form to notify of operation of a Soil Vapor Extraction unit (SVE); or prior to Excavating, Handling, Monitoring, Treating known or suspect Volatile Organic Compounds (VOC) contaminated soil per R1166. See instructions on the back of this form. For questions check our website at www.aqmd.gov or call the hotline at (909) 396-2326. FAX this form to 909-396-3342 and within 48 hours of the fax, MAIL the original form and fee to: SCAQMD - 1166/203 Notifications, File # 55641, Los Angeles, CA 90074-5641. This form will be faxed back to you with a REFERENCE number if you provide a FAXBACK # here: 949-268-9984

AQMD USE ONLY		RECEIVED BY	POSTMARK	REFERENCE # 288281
COMPLETED BY	Ray Smith	Company	ARB INC	Phone # (949) 598-9242
Date 10/20/11	check #	Amount	\$53.89	Project # BP Line 32 FIT Repair
NOTIFICATION TYPE (check one only)	Original (initial)	Revision (prior reference #)	Cancellation (prior reference #)	
PROJECT TYPE (check one only)	<input type="checkbox"/> Soil Vapor Extraction (SVE)	<input type="checkbox"/> R1166 Treating Contaminated So	<input checked="" type="checkbox"/> R1166 Excavation of VOC Soil/Tank	<input type="checkbox"/> R1166 Reporting > 50 ppm VOC Soil
	<input type="checkbox"/> R1166 Reporting > 1000 ppm VOC Soil			
SVE Permit issued to (name):		ARB INC	SVE Permit Number:	
SVE Distance to nearest sensitive receptor in feet (see your permit condition requirements):				
R1166 Mitigation Plan issued to (name):		ARB INC	R1166 Plan Number: 625316	
R1166 - Date & time of VOC > 50 or 1000 ppm exceedance:			Highest VOC reading in ppm:	
PROJECT DATES	START 10/24/11	END 12/24/11	WORK SHIFT	day <input checked="" type="checkbox"/> night <input type="checkbox"/> <input type="checkbox"/>
SITE CONTRACTOR INFORMATION		AQMD ID # 155820	CSLB License # 194079	Phone # (949) 598-9242
Name	ARB INC	Address 26000 Commercentre Dr.		
City	Lake Forest	ZIP 92642	Site supv name & phone # Ray, e 760-250-7663	
SITE INFORMATION		Site Name BP Pipeline NA	Site AQMD ID #	800052
Site Address		Intersection of Golden Ave		Cross Street W 32nd Street
Site City		Long Beach	zip	90806
		Site contact name & phone # Ray 760-250-7663		
TANK INFORMATION	# OF TANKS	EACH	CAPACITY (gal)	MATERIAL STORED IN TANK ABOVE GROUND? (Y/N)
Example	3 tanks		10,000	Gasoline no
INFORMATION CERTIFICATION I certify that the above information is complete and accurate				
Company Name	ARB INC	Print Name	Ray Smith	Signature Date 10/20/11
COMMENTS				

Rule 1166 Soil Monitoring Records

COMPANY NAME ARB, INC 26000 COMMERCENTRE DR LAKE FOREST, CA 92630 Reference No(s): 288281	Facility/Site Information Name: BP PIPELINE NA INC Address: Intersection of Golden Ave and 32 nd Street City: Long Beach Zip: 90806
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PLAN # 525316 I.D. # 155820 LINE 32 ILI Repair Dig at Site#4

Monitor Information	Calibration Data	Monitoring Personnel	Excavation Summary <small>(Upon completion of each page)</small>
Brand: MSA	Gas: ISOBUTYLENE	Name: Jeri Reyes	Total Cubic Yds. (This page)
Model: SIRIUS	Date: 11-28-11	Company: ARB INC	Total Cubic Yds. (To date)
Type MULTIGAS DETECTOR	By:	Phone: 949) 795 0378	Removed from Site (To date)

Time	VOC Concentration (PPMV) @ Excavated Load			Comment	Time	VOC Concentration (PPMV) @ Excavated Load			Comment
	Every 15 min.	Reading	Hexane Factor			Adjusted Reading	Every 15 min.	Reading	
7:45	∅			START	10:30				
8:00	∅				10:45				
8:15	∅				11:00				
8:30	∅				11:15				
8:45	∅				11:30				
9:00	∅				11:45				
9:15	∅				12:45	∅			START
9:30	∅				1:00	∅			
9:45	∅				1:15	∅			
10:00	∅			STOP	1:30	∅			
10:15					1:45	∅			

I certify that the information contained in the above document is true and correct. I further certify that the above listed hydrocarbon monitor was operated in a manner consistent with the manufacturer's specifications and the conditions specified within this plan. In addition, I certify that the above readings represent the actual measurements I observed and recorded during the excavation process.

SIGNATURE: _____

DATE: 11-28-11

Rule 1166 Soil Monitoring Records

COMPANY NAME ARB, INC 26000 COMMERCENTRE DR LAKE FOREST, CA 92630 Reference No(s). <p style="text-align: center; font-size: 1.2em;">288281</p>	Facility/Site Information Name: <p style="text-align: center; font-size: 1.2em;">BP PIPELINE NA INC</p> Address: <p style="text-align: center; font-size: 1.2em;">Intersection of Golden Ave and 32nd Street</p> City: Zip: <p style="text-align: center; font-size: 1.2em;">Long Beach 90806</p>
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PLAN # 525316 I.D. # 155820 LINE 32" LI Repair Dig at Site#4

Monitor Information	Calibration Data	Monitoring Personnel	Excavation Summary <small>(Upon completion of each page)</small>
Brand: <p style="text-align: center; font-size: 1.2em;">MSA</p>	Gas: <p style="text-align: center; font-size: 1.2em;">ISOBUTYLENE</p>	Name: <p style="text-align: center; font-size: 1.2em;">JOEY REYES</p>	Total Cubic Yds (This page)
Model: <p style="text-align: center; font-size: 1.2em;">SIRIUS</p>	Date: <p style="text-align: center; font-size: 1.2em;">11-28-11</p>	Company: <p style="text-align: center; font-size: 1.2em;">ARB INC</p>	Total Cubic Yds (To date)
Type: <p style="text-align: center; font-size: 1.2em;">MULTIGAS DETECTOR</p>	By:	Phone: <p style="text-align: center; font-size: 1.2em;">(949) 795 0378</p>	Removed from Site (To date)

Time	VOC Concentration (PPMV) @ Excavated Load			Comment	Time	VOC Concentration (PPMV) @ Excavated Load			Comment
	Every 15 min.	Reading	Hexane, Factor			Adjusted Reading	Every 15 min.	Reading	
2:00	∅								
2:15	∅								
2:30	∅								
2:45	∅								
3:00	∅								
3:15	∅								
3:30	∅			STOP					

I certify that the information contained in the above document is true and correct. I further certify that the above listed hydrocarbon monitor was operated in a manner consistent with the manufacturer's specifications and the conditions specified within this plan. In addition, I certify that the above readings represent the actual measurements I observed and recorded during the excavation process.

SIGNATURE: _____

DATE: 11-28-11

Rule 1166 Soil Monitoring Records

COMPANY NAME ARB, INC 26000 COMMERCENTRE DR LAKE FOREST, CA 92630 Reference No(s). 288281	Facility/Site Information Name: BP PIPELINE NA INC Address: Intersection of Golden Ave and 32 nd Street City: Long Beach Zip: 90806
--	---

PLAN # 525316	I.D. # 155820	LINE 32 ILL Repair Dig at Site#4
Monitor Information	Calibration Data	Monitoring Personnel
(Upon completion of each page)		
Brand: MSA	Gas: ISOBUTYLENE	Name:
Model: SIRIUS	Date:	Company: ARB, INC
Type: MULTIGAS DETECTOR	By:	Phone:
		Total Cubic Yds (This page)
		Total Cubic Yds (To date)
		Removed from Site (To date)

Time	VOC Concentration (PPMV) @ Excavated Load			Comment	Time	VOC Concentration (PPMV) @ Excavated Load			Comment
	Reading	Hexane Factor	Adjusted Reading			Reading	Hexane Factor	Adjusted Reading	
Every 15 min.					Every 15 min.				

I certify that the information contained in the above document is true and correct. I further certify that the above listed hydrocarbon monitor was operated in a manner consistent with the manufacturer's specifications and the conditions specified within this plan. In addition, I certify that the above readings represent the actual measurements I observed and recorded during the excavation process.

SIGNATURE: _____ DATE: _____

EXHIBIT 5



BP Pipelines (North America) Inc.

5905 Paramount Blvd.
Long Beach, CA 90805
Phone 562 728-2265
Fax 562 728-2760

December 4, 2012

Mr. Pinaki Guha-Niyogi
Case Manager
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street
Los Angeles, CA 90013

Subject: Response to Regional Water Quality Control Board Letter of November 6, 2012

Site/Case: Near 712 Baker Street
Long Beach, California

Dear Mr. Guha-Niyogi:

BP Pipelines (North America) Inc. ("BP") and the Atlantic Richfield Company ("ARC"), which manages remediation activities for BP, have prepared this response to a letter submitted by the Los Angeles Regional Water Quality Control Board ("LARWQCB" or "Board") to BP on November 6, 2012 (the "Letter"). The extensive research, technical analysis, and evaluations conducted by BP since receipt of the LARWQCB's Water Code 13267 Order dated May 11, 2012 (the "Order") continue to demonstrate that BP is not a discharger or suspected discharger under Water Code 13267. Accordingly, we believe and request that the Order be rescinded. This letter provides evidence to support our request. We look forward to our meeting with you and your legal counsel tomorrow, December 5, 2012, to review the most important pieces of evidence that support our request. BP submits this detailed evidence to allow the Board to complete its evidentiary evaluations, as required under Water Code 13267(b) and (e).

The Order relates to property "near 712 Baker Street" ("Site"), which is a wastewater treatment and oil recovery facility that Oil Operators Incorporated ("OOI") has operated since 1926.¹ The Order notes the existence of a "benzene soil vapor plume, present beneath the northern portion of the OOI site." BP Pipelines 32 and 34 run beneath Golden Avenue along the eastern boundary of this property, but BP has no records of leaks that could have impacted the benzene vapor plume or other areas of OOI's

¹ The south OOI property consists of approximately 15 acres, bounded on the east by Golden Avenue, on the west by the Los Angeles River, on the south by a dog park, and on the north by Baker Street. The north OOI property consists of approximately 5 acres, bounded on the east by a park, on the west by the Los Angeles River, on the south by Baker Street, and on the north by the 405 Freeway. Residences are located to the east of Golden Avenue.

property and has considerable data and site operations information showing OOI's operations may be the source of benzene, unrefined product, and refined product along the relevant eastern boundary.

In the Letter, the LARWQCB states unequivocally that the "source of hydrocarbon vapors (primarily benzene) that have been detected under the BP pipelines, Golden Avenue, Wrigley Heights residences, and the OOI site is BP Line 34." BP disagrees that available data support this conclusion and appreciates the opportunity to meet with you to explain why and to ensure, among other things, that BP is not required to conduct work of other responsible parties and that the work required is within the scope of Water Code 13267.²

Large Amount of Data Shows BP Pipelines is Not a Source

BP believes that there already exists a large amount of soil, soil vapor, and groundwater data that shows, at a minimum, that:

- a) soils/soil vapor are *not* impacted near BP pipelines in a manner that would be indicative of a top-down pipeline release of gasoline; in fact, the opposite appears to be true;
- b) data do not establish a "track of shallow . . . benzene" and the forensic signature of the single instance of shallow benzene (significantly higher than laboratory detection limits) matches the forensic signature of deeper benzene on OOI's property, suggesting the same source;³
- c) OOI handled many materials that contain benzene, including refinery waste and possibly gas condensate, which contain benzene; and
- d) chemical fingerprint data do not show a consistent forensic signature, which would be expected if the only source of contaminants was a pipeline release; instead, forensic signatures indicate (i) multiple sources of contamination, not one continuous source along Golden Avenue as stated by the Board and (ii) a release from operations such as OOI, that included treatment of a variety of input streams and over decades of operation.

Shifts in the Board's Initial Investigative Focus

The Board's initial focus was to seek that BP investigate primarily one data point -- known as vapor extraction system well A ("VES-A"), located slightly south of the northeast corner ("NEC") of the Site along Golden Ave, the eastern boundary of the OOI property. BP installed two asphalt patches near VES-A after successfully hydrotesting Line 32 and performing preventative maintenance. The area near VES-A continues to be the only point along Golden Avenue where shallow benzene exists at concentrations significantly above laboratory reporting limits; but the benzene concentration is hundreds of times higher at deeper levels (*see* data point CESV-33 near VES-A) and the benzene detected is not from gasoline, as we have shared with the Board.

² BP's June 8, 2012 petition for review to the State Water Resources Control Board further explains how the Order is contrary to Water Code Section 13267. BP has not discharged and cannot be suspected of having discharged waste near the Site. Further, the Order does not bear a reasonable relationship to the need for requested data, in that it is duplicative of more than 40 samples of existing data relevant to the Site.

³ Most benzene detections in the shallow soil gas along the pipeline corridor (specifically samples CESV-12, CESV-25, CESV-26, CESV-28, CESV-32) were only slightly above the laboratory reporting limit of 0.10 µg/L. For further evaluation, BP obtained and reviewed the chromatograms of the analytical blanks run each day. The blanks ranged from 0.05 µg/L to 0.089 µg/L on the 3 days that these samples were analyzed. If the contribution from the blank is considered, the reported result would be below detection for all of these shallow soil gas samples along the pipeline.

Since the May 2012 Order, however, the Board's focus has shifted from seeking investigations to concluding – before even one BP investigation is complete – that BP is responsible for gasoline-type hydrocarbon impacts along the eastern boundary. At this point, the Board does not think that OOI can be the source of refined product contamination and does not think that significant contamination on the OOI site has migrated to the eastern boundary where the BP pipelines are located. The Letter, in fact, seeks that BP undertake remediation activity, a request BP believes is premature and not based on substantial evidence.

The Informal Areas of Concern (AOCs) and Other Detections

The shift from seeking an investigation to concluding responsibility appears to rest on two informal areas of concern and on certain compounds detected in the subsurface [namely benzene, iso-octane, and 1,2-dichloroethane (1,2-DCA) identified in Reasons 4, 5 and 6 of the Letter]:

- AOC A, located slightly south of the NEC of the OOI site (approximately 200 feet south of the northern BP asphalt patch in Golden Avenue and approximately 75 feet north of the southern BP asphalt patch);
- AOC B, located at the southeast corner (“SEC”) of the OOI site near the bend in Golden Avenue;
- The presence of benzene at AOC A, which the Board has indicated could only have originated from BP Line 34 (*see* Reason 4);
- The presence of iso-octane in a product sample collected from Brycon-MW1 (near AOC B) (*see* Reason 5).
- Various areas of interest where 1,2-DCA was detected including AOC A (*see* Reason 6);

Thus, there are two informal AOCs – one at the SEC of the OOI site (AOC B) and one just south of the NEC (AOC A). *See* Figure 2 attached.

BP has invested extensive time and effort to conduct a thorough and detailed evaluation of relevant data since receipt of the Order and at each time the Board emphasis for responsibility shifted. As a result of this effort, BP has reached conclusions that differ from the Board's. The existing data related to the Site is extensive, and BP's analysis of those data consistently shows an absence of a BP pipeline release in Golden Avenue. Our responses in the following portions of this letter address the Board's concerns based on the most relevant information we have at this time.

The Letter's Omissions

BP has previously provided to the Board a considerable amount of information over the last several months, but the Letter omits several pieces of important evidence, contrary to Water Code 13276(e), namely:

- (a) the absence of 1,2-DCA in all shallow soil vapor samples (evidenced by over 40 samples), verifying that the Site is not impacted by a top-down release (*see* Response to Reason 6);
- (b) the prevalence of high benzene and 1,2-DCA in groundwater and in deeper soil and soil vapor samples, demonstrating bottom-up movement of vapors (*see* Responses to Reasons 4 and 6);

- (c) the existence of higher concentrations of benzene in shallow vapor on the northern OOI property, indicating that OOI managed and released benzene-containing materials (see Response to Reason 3);
- (d) that the vapor sample signature on the OOI northern property matches the vapor sample signature at the AOC-A area, and the highest shallow vapor probe sample concentrations are found on the OOI northern property, therefore indicating a source that could originate on OOI property (see Response to Reason 4);
- (e) the presence of shallow methane above 100 volumetric parts per million (ppmv) on only the OOI property (i.e., not beneath or near Golden Avenue) with the higher concentration on the OOI northern property, suggesting a significant source of shallow hydrocarbon contamination on the OOI site;⁴
- (f) the absence of fingerprint data showing a simple gasoline signature, which would be evident if a pipeline released gasoline (see Response to Reason 5); and
- (g) the Board's decision not to add Plains All American Pipelines, L.P., to the Order because Plains' pipelines carried only crude oil (see Response to Reason 1).

Similar to Plains, and as we explained to you on or around November 15, 2012, BP pipelines are not the likely source of gasoline-type hydrocarbons at the Site. Line 34 carried diesel product and could not be the source of gasoline-type hydrocarbons. Line 32 carried crude oil and dark refined product (not gasoline) and likewise could not be the source of gasoline-type hydrocarbons at the Site. Line 252 has not carried gasoline since 1953 and is, therefore, not a viable current source of benzene.

BP also does not believe weathered gasoline is present in the southeast corner of the Site (near AOC B), contrary to conclusions by Zymax for OOI, and we would be glad to present further information on this point if you would like. The extensive available data related to the Site demonstrates what we believe is substantial evidence that BP pipelines are not the source of gasoline-type hydrocarbons at the Site. Nonetheless, BP continues to work with the Board in its investigations of existing data.

BP's Responses Thus Far

As part of BP's cooperation with Board, despite evidence that BP's lines are not the source, BP submitted two Work Plans on July 11, 2012 and on September 12, 2012 for additional investigation in response to the Order. After BP submitted its September 2012 work plan, OOI shared new data with the Board in September and October 2012. OOI appears to have led the Board to believe that BP pipelines are impacting the eastern boundary of the OOI site (particularly at the SEC of the OOI site). Although BP believed the scopes of work presented in these plans were excessive based on the data evaluations, the LARWQCB considered the plans insufficient and did not approve either plan. Most recently, the Board has informally requested groundwater samples, which are not required in the Order and result in the need for deeper investigation than would likely be needed to identify a near-surface pipeline release.

⁴ Methane is generated through anaerobic degradation of organic compounds, such as benzene and other petroleum hydrocarbons.

The Reasons in the Letter That Assert BP is a Discharger

The Letter presents seven reasons why BP is a “Discharger” and a “Responsible Party” for the referenced benzene contamination. The first three reasons relate to Lines 32 and 34, while the last three reasons relate to the presence of benzene, iso-octane, and 1,2-DCA.

Facts, data, and BP conclusions associated with each of these LARWQCB reasons are presented in the following bulleted sections of this response.

LARWQCB Reason 1

1. BP operates Line 32, which has been used for transport of crude oil and dark refined product.

- The Order identifies Line 32 as the source of “gasoline type hydrocarbon contamination” near the asphalt patches along Golden Avenue near 712 Baker Street.
- Records indicate that BP Line 32 has only been used for the transport of crude oil and dark refined product.
- BP Line 32 was idle from April 2007 until May 2012 and is now again used for the transport of crude and dark refined product.
- BP believes that BP Line 32 is not a source of gasoline-type hydrocarbon contamination identified in the Order because:
 - Records indicate that light refined product (i.e., gasoline) was not transported in Line 32. This information was previously submitted to the LARWQCB.
 - BP records indicate that the asphalt patches in Golden Avenue associated with Line 32 were due to preventive maintenance (coating) of dents discovered during a SmartTool inspection. No leak repairs were made. This information was also previously submitted to the LARWQCB.
- Line 32 has been used for transport of crude oil and dark-refined product, but BP believes that BP Line 32 is not a source of benzene at the Site because:
 - The LARWQCB has stated that no evidence of crude and heavy end product releases in soil, soil vapor, groundwater and/or product samples exists.
 - The LARWQCB stated that Plains All American Pipeline, L.P., which operates a crude pipeline beneath Golden Avenue, was not issued a 13267 order similar to BP’s because the contamination is not indicative of a crude release.
 - No records of Line 32 releases beneath Golden Avenue in the area of 712 Baker Street have been identified by BP.

BP Conclusion: Records indicate that BP Line 32 is not a source of gasoline-type hydrocarbon or benzene contamination identified in the Order.

LARWQCB Reason 2

2. *BP operates Line 34, which has been used for the transport of diesel and other refined products (including gasoline).*

- BP has operated and continues to operate Line 34. BP does not believe that Line 34 is a source of contaminants at the Site because:
 - Initial document summaries presented by BP indicated that Line 34 was used for the transport of refined products, potentially including gasoline. However, recent records indicate that the only refined product transported in Line 34 is diesel. This recent information was submitted to the LARWQCB on November 15, 2012.
 - BP records show no indication of a release from Line 34 in the area of 712 Baker Street. A 2-barrel leak of unknown material from Line 34 occurred in 1990, per BP records. Based on current information, the material was likely diesel. However, the records do not provide a location/segment number for the release.
 - Line 34 (Segment C – the segment near 712 Baker Street) was hydrotested (and passed) in February 2010.
- BP's recent investigations also located additional information about Line 252, which BP reported to the LARWQCB by BP in a March 8, 2012 pipeline information response to an LARWQCB request. Line 252 has not been identified as a potential source of contamination in the area of 712 Baker Street in the Order or other LARWQCB correspondence and discussions but BP has included this line in its investigations. Information related to Line 252 is reiterated below.
 - BP records indicate that Line 252 (a 6-inch pipeline beneath Golden Avenue) was used for gasoline transport until 1953, and was then used for wastewater transport from 1953 until likely some time prior to 1977.
 - BP records also indicate that some piping was removed in 1977 [the location(s) of the removed piping is currently unknown].
 - BP records further identify Line 252 as inactive since 1995.
 - No hydrotest information for this line has been identified by BP to date.
 - A 1945 (original drawing date) ARCO pipeline map identifies segments of Line 252 pipe where the installation of a 4-inch pipe inside an existing 6-inch pipe occurred along Baker Street and replacement beneath Golden Avenue. No reasons for the pipeline replacements are provided.
- BP's recent investigations located historical information about Line 34, specifically:
 - Some historical pipeline drawings (e.g., the 1945 ARCO pipeline map and 1970s City of Long Beach pipeline maps) refer to Line 34 as a "Gasol" line, but it is BP's understanding based on its experience and the records indicating diesel use, that the term "Gasol" was historically generically applied to represent any refined fuel product.

- A 1945 (original drawing date) ARCO pipeline map identifies segments of Line 34 beneath Golden Avenue as having been replaced. The reason for the replacement is unknown.

BP Conclusion: When line use and history are considered along with analytical results collected by Oil Operators, Inc. (OOI) described in subsequent sections, BP Lines 34 and 252 do not appear to be a source of benzene release identified in the Order.

LARWQCB Reason 3

3. *While other company's [sic] pipelines have operated and currently operate in the area, the only pipelines identified as carrying refined products are BP's lines.*

- The LARWQCB presents no basis for this conclusion, with the exception that Plains reported that its line beneath Golden Avenue has only been used for crude transport.
- During BP conversations with the LARWQCB, the LARWQCB appeared to have been unaware of other potential sources of "gasoline type hydrocarbon contamination" beneath Golden Avenue and Baker Street or preferential pathways for contaminant migration, as it appears that requests for pipeline history and use records were not submitted to the owners of those lines. To the extent pipelines are relevant, the lines in the vicinity of 712 Baker Street identified by BP from publicly available information are shown on the attached Figure 1 and are listed below.
 - An abandoned 8-inch Golden Eagle pipeline,
 - An 8-inch Getty pipeline,
 - An abandoned 8-inch Getty pipeline,
 - A 6-inch Golden Eagle line,
 - A 10-inch Union Oil line,
 - An abandoned 6-inch Union Oil line,
 - An abandoned 4-inch General Exploration line,
 - A storm water pipeline,
 - An abandoned water pipeline,
 - Two 12-inch OOI wastewater pipelines crossing Baker Street between the north OOI and the south OOI properties,
 - Two 12-inch OOI wastewater pipelines entering south OOI from its northeast corner and running to the former clarifiers,
 - A 24-inch OOI wastewater pipeline, entering OOI from its southeastern corner along Golden Avenue,
 - A 24-inch OOI "storm" pipe traversing the southwestern portion of OOI,
 - A 6- to 8-inch vitrified clay pipe (VCP) sewer pipeline, and
 - A 30-inch VCP Los Angeles County Sewer line that runs along Golden Avenue, traversing the eastern side of the OOI property.
- No data have been sought to evaluate whether these lines are a source of contamination identified by the LARWQCB.

- The approximately 70 years of OOI operations at 712 Baker Street also represent the most viable source of contamination for site-wide as well as area-specific reasons:

Site-Wide or General Reasons:

- OOI accepted oil field brine and refinery waste for treatment at its site. Treatment generally consisted of transferring incoming waste through a series of large separation basins. Petroleum product was reportedly recovered from these basins to the extent practicable, and the remaining wastewater was discharged to the Los Angeles River and later discharged to a sewer line(s) noted above. The basins provided a significant source of contaminant infiltration to the subsurface in the area of 712 Baker Street.
- OOI accepted waste fluids from refineries, and these fluids contained the contaminants identified by the LARWQCB in the areas of concern (AOCs) and elsewhere.
- Specifically, OOI's process influent contained measured benzene concentrations as high as 3,100 ppb in 1989. In 1991, benzene concentrations in OOI's influent pipeline were measured over a 6-day period and ranged from 1,330 ppb to 5,110 ppb. The report indicates: "It is apparent from the samples that a significant inflow of Benzene is occurring [*sic*]."
- Higher concentrations of benzene in shallow vapor exist on the northern OOI property, indicating that OOI managed and released benzene-containing materials.
- Though not yet confirmed, BP's experience is that the type of refinery waste OOI handled may have included gas condensate, a material that contains benzene.
- According to the 1953 U.S. Department of the Interior report, in 1945, OOI processed in excess of 2,700,000 gallons per day of waste fluids in 12 basins on the northern and southern portions of the OOI property. The volume, duration, and waste types accepted and processed by OOI represent a viable source of past and on-going impacts in the area of 712 Baker Street.
- Land-farming of removed basin sediment was reportedly conducted on OOI property and ceased due to neighborhood complaints of excessive odors, suggesting significant volatile contamination in removed soil/sludge.
- A 1992 report by Jack K. Bryant and Associates, Inc., prepared on behalf of OOI, states: "The contamination of the groundwater and soil at the Oil Operators South Site by Acetone, Benzene and 1,2 Dichloroethane appears to be caused by a combination of 1) Contaminant inflow via the brine pipeline, and 2) Contaminant infiltration via the settling ponds."

Area-Specific Reasons

- Various OOI pipelines exist in proximity to AOC B (see Figure 2) on the southern portion of OOI property (see Figure 1). Information associated with the history and uses of these lines have not yet been provided on the GeoTracker website.
- Sumps are also located in proximity to AOC A and AOC B on the OOI property. It is unclear whether OOI has provided the Board information about the uses, depths, construction, line connections, etc., associated with these sumps. BP identified a 1953 U.S. Department of the Interior Geological Survey Water-Supply Paper that presents descriptions of OOI operations at that time. The document indicates that sumps on the

OOI site were as deep as 60 feet (i.e., potentially a direct injection point to groundwater). Benzene was detected in soil samples (including shallow soil, i.e., < 5 feet) collected on the OOI property (see Figure 3). The results indicate a shallow source on OOI property, and may not represent migrating contribution from pipelines beneath Golden Avenue to the OOI property.

- Diesel-range organics (DRO) were detected in shallow and deep samples on the OOI north property at concentrations orders of magnitude higher than detected in soil samples collected near Golden Avenue, which indicates an OOI source of DRO impact.
- Product and gasoline indicators also coincide with the path of the OOI wastewater line.
- Forensics evaluation indicates that soil vapor from OOI sample probes located on the north OOI property is similar to that detected in VES-A (near AOC A).
- The LARWQCB also alleged that the Golden Avenue pipelines are upgradient of the OOI site contaminants. This conclusion does not take into consideration the variable groundwater flow patterns documented in numerous OOI reports placed on GeoTracker. The LARWQCB thinks that groundwater and contaminants are flowing from Golden Avenue onto the OOI property (i.e., to the northwest). But, OOI's most recent groundwater flow data show the opposite. Groundwater and contaminants are flowing from the southern portion of the south OOI property toward the bend in Golden Avenue. Numerous records indicate significant and frequent variations in the flow direction. This recent groundwater flow direction and the product sources on OOI property explain best the simultaneous appearance of product in monitoring well Brycon-MW1.
- In discussions with the LARWQCB, BP was informed that the Board views all of the groundwater and soil/soil vapor impact along Golden Avenue as one continuous source. The data and earlier OOI benzene groundwater plume depictions do not support that conclusion. Groundwater iso-concentration maps for benzene prepared by OOI and Brycon and contained in several reports, including the October 15, 2012 quarterly groundwater report, are inaccurate. They extend iso-concentration lines to the east of the OOI property into Golden Avenue and neighborhoods farther east. There are no groundwater data to support the depictions shown. The October 2012 iso-concentration lines also differ significantly from September 2011 depictions included in the OOI/Brycon 2011 Report on Additional Site Characterization. Benzene iso-concentration lines in the September 2011 report show two separate and distinct areas of groundwater benzene impact, separated by EMCON-MW3, which was reportedly since destroyed. Significant topographic variation is present in the vicinity of Golden Avenue. This variability is not accurately depicted on 2010 and 2011 OOI and California Environmental drawings. BP requested survey coordinates for vapor probes installed by OOI but has not yet received that information.

BP Conclusion: Significant potential sources of benzene and other contaminants in the area of 712 Baker Street, other than the BP pipelines, exist. Based on discussions and correspondence with the LARWQCB, it does not appear that a detailed evaluation of contaminant contribution by other viable sources has been conducted. In addition, data support the conclusion that past OOI operations are a

source of soil, soil vapor, and groundwater contamination in the area, contrary to conclusions made by the LARWQCB.

LARWQCB Reason 4

4. *Oil Operator [sic] Inc. (OOI) soil gas data under Golden Avenue indicates a track to shallow soil for benzene, near BP pipelines 32 and 34, where the Regional Board has informally identified Area of Concern (AOC) "A" to exist, in discussions with BP.*

- a. *AOC A is along the stretch of BP Pipelines 32 and 34 in Golden Avenue, approximately across the street (west of) 3743 Countryside Lane.*
- b. *AOC A is also located near two recent BP pipeline repair locations.*

- The "track of shallow soil for benzene" seems to be based on inaccurate data. In September 2011, California Environmental prepared for OOI a shallow benzene in soil gas concentration "plume" map that erroneously report benzene at 5 feet at soil-gas sample location CESV10. No benzene was detected in the soil gas sample collected at 5 feet below ground surface (bgs) in CESV10 in the vicinity of AOC A. Similar errors were found on other California Environmental drawings. Correct contouring of the shallow benzene results would depict separated areas of shallow benzene, not one continuous area as shown.
- BP has identified no data that supports the assertion of a "track of shallow ... benzene." Benzene is present in shallow soil vapor samples collected from VES-A, near AOC A, but analytical data show that gasoline is not the source of the benzene. In addition, data in this area do not support a top-down pipeline release from a BP pipeline. No shallow benzene is present at AOC B.
- With the exception of soil vapor collected from CESV33 (near AOC A), soil vapor samples collected to the south of CESV33 contain no shallow benzene or benzene at concentrations nearly equal to the detection limit.
- Concentrations of benzene in soil vapor at CESV33 (near AOC A) increase significantly with depth to a maximum concentration at 20 feet bgs hundreds of times higher than benzene at 5 feet bgs. This indicates a deeper source of contamination, not a shallow pipeline source.
- There is a prevalence of high benzene and 1,2-DCA in groundwater and in deeper soil and soil vapor samples, demonstrating a bottom-up movement of vapors (see for example, vapor probe locations CESV10, CESV15, CESV19, CESV30, and CESV33).
- A soil vapor sample collected from VES-A (i.e., in AOC A) contains predominantly cyclic hydrocarbons, not branched hydrocarbons, which suggests that the composition of the soil vapor is of an unrefined nature. The VES-A sample chromatograms lack the triplet of ethylbenzene and xylenes peaks present in gasoline. In addition, iso-octane was not present in this sample. Therefore, the VES-A soil vapor is not sourced from gasoline.
- BP data associated with AOC A show gasoline is not a source of benzene because:
 - The vapor sample forensic signature on the OOI northern property matches the vapor sample signature at the AOC-A area, and the higher shallow vapor probe sample

- concentrations are found on the OOI northern property, therefore indicating a source that could originate on OOI property (see, for example, VES-A, CESV7, and CESV2).
- As indicated, the asphalt patches near AOC A are not the results of pipeline repairs; rather, preventive maintenance was conducted at these two locations.
 - AQMD 1166 data records from the time of the maintenance excavations show no volatile organic compound (VOC) impacts from the BP lines.
 - Hydrotest results show no releases.
- In addition, no benzene was detected in shallow soil gas samples collected in the vicinity of LARWQCB AOC B (near the bend in Golden Avenue). Lastly, soil vapor probe sample results for total petroleum hydrocarbons in the gasoline range (TPHg) and benzene are lower at the 5- and 10-foot depths, demonstrating the absence of data of a top-down release from a pipeline. Instead, with minor exceptions, TPHg and benzene are higher at deeper intervals in all OOI vapor samples, demonstrating a deeper-level of contamination migrating upward. The minor exceptions involve isolated data points:
 - The CESV32 (located in Golden Avenue in between AOCs A and B) sample collected at 5 feet bgs contains TPHg and benzene at concentrations just slightly above detection limits. TPHg and benzene were not detected in any of the deeper samples.
 - The CESV5 (located near Baker Street on the OOI site west of AOC A) sample results from 5 and 10 feet bgs are numerically higher than the concentration at 20 feet bgs; however, the difference in concentration is negligible, the location is not near the BP pipelines, and the data do not indicate of a top-down release.
 - The CESV28 (located off-site south of the bend in Golden Avenue) contains a single detection of benzene at 5 feet bgs at concentrations just slightly above the reporting limits. Benzene was not detected in any of the deeper samples.

BP Conclusion: Soil vapor data do not support a top-down pipeline release along Golden Avenue. Further, gasoline is not present in the soil vapor sample collected from VES-A (near AOC A).

LARWQCB Reason 5

5. *A product sample collected from Brycon MW-1 (identified as AOC B), near the BP pipelines toward the southern portion of the OOI property, had indicators of a gasoline source product sample.*
 - a. *The sample contained 2,2,4-trimethylpentane and other trimethylpentanes (iso-octane), which are components of gasoline.*
 - i. *BP previously argued to the Regional Board that subsurface samples lacked iso-octane and, therefore, did not originate from a gasoline source. This data is contrary to BP's claim.*
 - b. *The sample contained high concentrations of n-alkanes, heptane, octane, nonane, and decane. Historic [sic] leaded gasolines with high naphtha contents contained elevated n-alkane concentrations. The presence of high n-alkane concentrations suggests that this product may represent an old leaded gasoline.*
 - c. *The sample lacked evidence of heavier hydrocarbons that may indicate a crude oil source.*

- During BP's presentation to and discussions with the LARWQCB on August 9, 2012, BP described the absence of iso-octane in soil vapor samples, not the product sample referenced in this comment. In fact, for OOI Zymax collected the product sample referenced in Reason 5 in September 2012, after BP met with Board staff on August 9.
- The data related to Reason 5 relates primarily to AOC B, near the SEC of the OOI where Golden Avenue bends.
- With regard to AOC B, Zymax concluded that the product in Brycon-MW1 is a weathered leaded gasoline, but BP's analysis does not support this conclusion.
- Chemical fingerprint data do not show a consistent forensic signature, which would be expected if the only source of contaminants was a pipeline release.
- Product appeared in Brycon-MW1 simultaneous with a change in groundwater flow – measured as from OOI (northwest) toward the bend in Golden Avenue (southeast), suggesting an on-site LNAPL source moving into the vicinity with change in flow direction, originating on the OOI property, perhaps at the nearby sump location, the wastewater line on the OOI property, the basins on the OOI property, or impacts from land-farming.
- Zymax indicates that groundwater forensics for Brycon-MW1 also indicate a gasoline signature, but markedly different from the product sample, which is consistent with BP's conclusions. This suggests groundwater is impacted by a source(s) in addition to or other than the product in the product sample.
- Zymax indicates that ESE-MW1 and Brycon-MW2 groundwater constituents are characteristically different from the Brycon-MW1 constituents; therefore, this negates the LARWQCB's earlier stated conclusion that all contaminants along Golden Avenue are related to a single source (BP Line 34)
- No soil vapor impacts were found at depths of 5 feet at locations near AOC B, which indicates that the BP pipelines are not a source of release in AOC B.
- BP records indicate that its Line 252 has not transported gasoline in 55+ years and the evidence doesn't support a BP pipeline release.

BP Conclusion: Contribution from BP pipelines is not evident in AOC B due to an absence of shallow contamination in that area and records that indicate BP's lines have not been used for the transport of gasoline for 55+ years.

LARWQCB Reason 6

6. *1,2-Dichloroethane (1,2-DCA) is a lead scavenger that was historically added to leaded gasoline to prevent buildup of lead oxide deposits within internal combustion engines. 1,2-DCA has been detected along the BP pipelines in Golden Avenue.
The only known source of gasoline in the area is BP Line 34.*

- 1,2-DCA was not detected in any OOI soil vapor probe samples, which demonstrates there is no shallow 1,2-DCA in the pipeline corridor. This further confirms the absence of a top-down pipeline release of gasoline from Line 34 or any BP pipeline.
- 1,2-DCA was not detected in OOI 2010 shallow soil samples. Only one deeper soil sample contained 1,2-DCA: B-14, which is located near VES-A and a BP pipeline asphalt patch in Golden Avenue. In B-14, 1,2-DCA was detected at a depth of 30 feet bgs, and all shallower samples in that boring contained no detectable 1,2-DCA.
- Various data show Line 34 is not a source of gasoline:
 - Records indicate that BP Line 34 has been used for diesel fuel transport only. Line 32 was used for crude oil and dark refined product
 - 1,2-DCA is not a component of diesel, crude, or dark-refined products.
 - The contents of BP Line 252 during its use as a wastewater line are not currently known. However, there are no indications of a Line 252 pipeline release.
 - According to BP records, no Line 34 “repairs” were made along this section of Golden Avenue.
 - The Board indicated that 1,2-DCA has a similar distribution (presumably referencing groundwater concentrations) to benzene. As shown on Figure 4, historical and current groundwater data do not correlate well. For example, 1,2-DCA was detected in only one of the seven wells sampled by OOI in September 2012; however, benzene was detected in five of the wells. Historical benzene and 1,2-DCA groundwater concentrations also show variability and a lack direct correlation. We request clarification from the Board regarding its statement that the distributions are similar.
- 1,2-DCA data do not support the conclusion that BP Line 34 is a source of gasoline (or the only source of gasoline).
 - 1,2-DCA was detected in OOI site groundwater samples collected along the eastern, southern, and northern portions of the OOI property. Higher concentrations of 1,2-DCA were historically detected in groundwater on the north OOI property, which suggests that 1,2-DCA was a component of wastes handled by OOI.
 - 1,2-DCA is also prevalent in available deeper soil vapor samples, demonstrating a bottom-up movement of soil vapor
 - This predominant presence of 1,2-DCA on the north OOI property suggests the likelihood of a leaded gasoline/1,2-DCA source on the OOI north property or in/near Baker Street, suggesting the OOI operations as the likely source of 1,2-DCA.
 - There are possibly two separate sources of 1,2-DCA in groundwater – one near the north property and one near AOC B, further suggesting OOI as a likely source
 - BP’s analysis indicates that the 1,2-DCA on the OOI property near Golden Avenue is more likely due to OOI than to BP pipelines in that area.

Differences in forensics characteristics of OOI monitoring well groundwater samples suggest multiple sources of contamination, consistent with historical operations at the OOI site. BP Conclusion: 1,2-DCA has not been detected in any sample locations except on the OOI property, and 1,2-DCA was not detected in any soil vapor probe results or in shallow soil (above 30 feet bgs). Higher concentrations of

1,2-DCA in groundwater were historically detected on the north OOI property. BP pipelines beneath Golden Avenue do not appear to be the source of 1,2-DCA near 712 Baker Street.

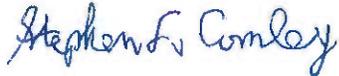
LARWQCB Reason 7

7. *The Regional Board acknowledges that benzene likely existed within the crude oil production waste water processed by OOI adjacent to the BP pipelines, as BP has claimed. However, based on the distribution of maximum benzene concentrations below BP's pipelines; a similar distribution of 1,2-DCA from a gasoline source along BP's pipelines; the presence of iso-octane and n-alkanes indicating a gasoline source adjacent to BP's pipelines; and a lack of evidence pointing to heavier end hydrocarbons indicative of a crude oil source (Brycon-MW1), all evidence indicates that BP is a discharger and, therefore, a Responsible Party.*

- See bulleted items in sections above regarding LARWQCB Reasons 1 through 6, and see key points presented graphically on Figure 5.
- Regarding “distribution of maximum benzene concentrations below BP’s pipelines,” the term “below” is misleading. Benzene has been detected in groundwater only on the OOI property (i.e., the location of the monitoring well network). As has been shown, data for AOC A indicate that shallow benzene detected did not originate from the BP pipelines. Shallow benzene is not present at AOC B. Thus, *there is no maximum distribution of benzene beneath BP pipelines, based on available data that at most shows one significant concentration of shallow benzene that did not arise from gasoline-type hydrocarbons.*
- Regarding “a similar distribution of 1,2-DCA from a gasoline source along BP’s pipelines,” BP’s data evaluation does not identify a current or historical correlation between 1,2-DCA and benzene in groundwater. There is no shallow 1,2-DCA anywhere near the BP pipelines. Line 34 carried diesel and Line 32 carried crude oil and dark refined product; 1,2-DCA is not a component of diesel, crude oil, or dark refined product.
- Regarding “the presence of iso-octane and n-alkanes indicating a gasoline source adjacent to BP’s pipelines,” (near AOC B), iso-octane and n-alkanes are present in many other types of petroleum based materials, so their presence is not definitive proof that refined gasoline was ever present. Further, BP records indicate that Line 252 has not transported gasoline in 55+ years and there the evidence doesn’t support a BP pipeline release. Other data for AOC B suggests different contributing sources. For example, that ESE-MW1 and Brycon-MW2 groundwater constituents are characteristically different from the Brycon-MW1, therefore negating the LARWQCB’s earlier stated conclusion that all contaminants along Golden Avenue are related to a single source (BP Line 34).
- Regarding “a lack of evidence pointing to heavier end hydrocarbons indicative of a crude oil source (Brycon-MW1),” documentation and data indicate that OOI accepted wastewater that contained benzene and 1,2-DCA.

BP Conclusion: Multiple lines of technical evidence indicate that BP pipelines beneath Golden Avenue are not a source of "gasoline type hydrocarbon contamination" identified by the LARWQCB in the vicinity of 712 Baker Street. Accordingly, we request the LARWQCB carefully consider this evidence in support of BP's request that the Order be rescinded.

Sincerely,



Stephen D. Comley
Environmental Coordinator

Attachments: Figure 1 – Site Vicinity Map
Figure 2 – Investigation Areas
Figure 3 – Focused Soil Data Summary
Figure 4 – Focused Groundwater Data Summary
Figure 5 – Summary Drawing

cc: Mr. Darrel K. Fah, Atlantic Richfield Company
Mr. Chris Winsor, BP Remediation Management
Ms. Jennifer Fordyce, SWRCB
Mr. Samuel Unger, P.E., LARWQCB
Dr. Arthur Heath, LARWQCB
Mr. Jeffrey Hu, LARWQCB
Mr. Gregory Bishop, LARWQCB
Mr. Frank Muramoto, P.G., AECOM
Ms. Mary Jo Anzia, AECOM
Councilman James Johnson, City of Long Beach
Ms. Joan Greenwood, Wrigley Area Neighborhood Alliance
Mr. George B. Paspalof, Brycon, LLC
Mr. Nelson Kerr, City of Long Beach, Health and Human Services Department
Ms. Carmen Piro, City of Long Beach, Health and Human Services Department
Mr. Ngiabi Gicuhi, Plains Pipelines
Ms. Gabriele Windgasse, California Department of Public Health

LEGEND:

- HISTORICAL GROUNDWATER MONITORING WELL LOCATION
- VAPOR EXTRACTION SYSTEM WELL (CALIFORNIA ENVIRONMENTAL 2012)
- OOI WELLS BORINGS (BRYCON 2010/2011)
- OOI SOIL VAPOR PROBE (CALIFORNIA ENVIRONMENTAL, 2011)
- SOIL BORING (AEMC, 1991)
- MANHOLE
- LOCATION OF PREVENTATIVE MAINTENANCE ON BP LINE 32 AT 45FT AND 375FT SOUTH OF BAKER STREET
- 12-INCH BP (USPL) 32 PIPELINE (ABANDONED)
- 8-INCH BP (USPL) 34 PIPELINE (ABANDONED)
- 6-INCH BP (USPL) 252 PIPELINE (ABANDONED)
- 6-INCH PLAINS PIPELINE
- 6-INCH PLAINS PIPELINE (ABANDONED)
- 4-INCH GENERAL EXPLORATION PIPELINE (ABANDONED)
- 8-INCH GETTY PIPELINE
- 8-INCH GETTY PIPELINE (ABANDONED)
- 8-INCH GOLDEN EAGLE PIPELINE
- 8-INCH GOLDEN EAGLE PIPELINE (ABANDONED)
- APPROXIMATE STORM PIPING
- 10-INCH UNION OIL PIPELINE
- 30-INCH UNION OIL PIPELINE (ABANDONED)
- 30-INCH WATER PIPELINE
- WATER PIPELINE (ABANDONED)
- 12-INCH OOI WASTEWATER PIPELINE
- 24-INCH OOI WASTEWATER PIPELINE
- 24-INCH OOI "STORM" PIPELINE
- 30-INCH VCP L.A. COUNTY SEWER LINE (APPROXIMATE)
- 6 TO 8-INCH VCP SEWER LINE
- SUMP
- LARVOC AREA OF CONCERN

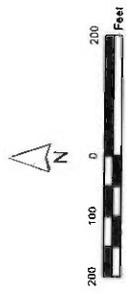
NOTES:

1) IT IS ADVISED THAT CRIMSON PIPELINE OWNS ONE ACTIVE GRIDE AND ONE ABANDONED GRIDE IN THE NORTHWEST CORNER OF THE OOI SOUTHERN PROPERTY. THESE LINES ARE NOT DEPICTED ON THIS DRAWING.

2) PIPELINE INFORMATION SOURCES: CITY OF LONG BEACH AND ARC RECORDS

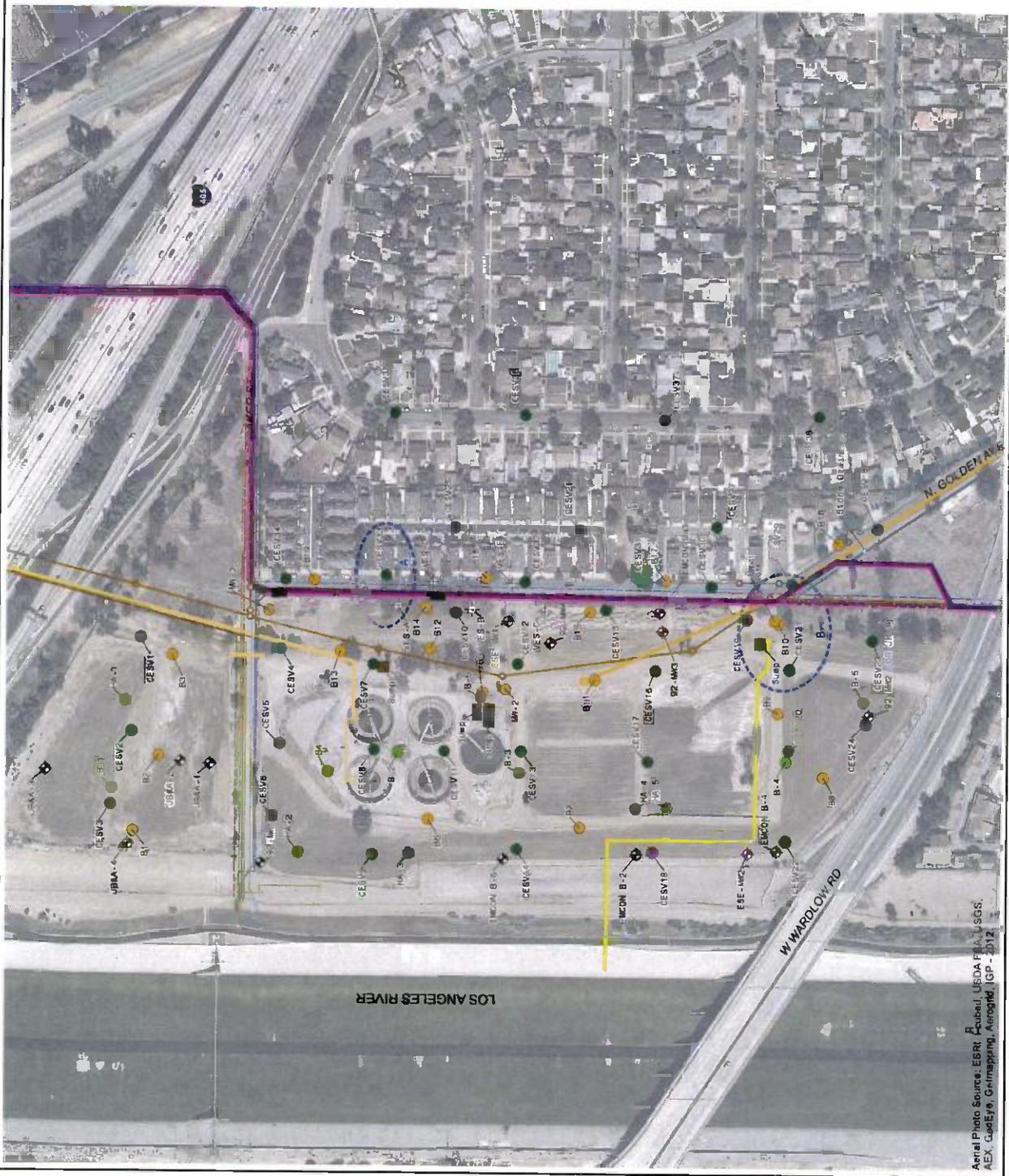
ABBREVIATIONS:

- RWQCB REGIONAL WATER QUALITY CONTROL BOARD
- USPL BP U.S. PIPELINES & LOGISTICS
- VCP VITRIFIED CLAY PIPE



INVESTIGATION WORK PLAN NEAR 712 BAKER STREET LONG BEACH, CALIFORNIA			
INVESTIGATION AREAS			
PROJECT NO.	DRWN.	CHK.	DATE
82285155-450	SM	MMV	11/18/12

FIGURE 2



Aerial Photo Source: ESRI, Fuzsaul, USDA, FIA, USGS, AEX, GeoEye, Geomapping, Aerophot, JGP - 2012

The final Date: Monday, December 10, 2012 9:12 AM
File: T:\1208080 and B:\10703\1208080\1208080.dwg

LEGEND:

- HISTORICAL GROUNDWATER MONITORING WELL LOCATION
- VAPOR EXTRACTION SYSTEM WELL (CALIFORNIA ENVIRONMENTAL, 2012)
- COI WELLS BORINGS (BRYCON 2010/2011)
- COI SOIL VAPOR PROBE (CALIFORNIA ENVIRONMENTAL, 2011)
- SOIL BORING (AEMC, 1991)
- NO BORING LOG OR SOIL ANALYTICAL DATA AVAILABLE
- NO SOIL IMPACTS DOCUMENTED IN BORING LOG AT THIS LOCATION
- LOCATION OF PREVENTIVE MAINTENANCE ON BP LINE 32 AT 457' AND 375' SOUTH OF BAKER STREET
- 12-INCH BP (USPL) 32 PIPELINE (ABANDONED)
- 8-INCH BP (USPL) 34 PIPELINE (ABANDONED)
- 6-INCH BP (USPL) 32 PIPELINE (ABANDONED)
- 6-INCH PLAIN PIPELINE
- 6-INCH PLAINS PIPELINE (ABANDONED)
- 4-INCH GENERAL EXPLORATION PIPELINE (ABANDONED)
- 8-INCH GETTY PIPELINE
- 8-INCH GETTY PIPELINE (ABANDONED)
- 8-INCH GOLDEN EAGLE PIPELINE (ABANDONED)
- 8-INCH GOLDEN EAGLE PIPELINE (ABANDONED)
- APPROXIMATE STORM PIPING
- 10-INCH UNION OIL PIPELINE
- 6-INCH UNION OIL PIPELINE (ABANDONED)
- 30-INCH WATER PIPELINE
- WATER PIPELINE (ABANDONED)
- 12-INCH COI WASTEWATER PIPELINE
- 24-INCH COI WASTEWATER PIPELINE
- 24-INCH COI STORM PIPELINE
- MANHOLE
- 30-INCH VCP L.A. COUNTY SEWER LINE (APPROXIMATE)
- 6 TO 8-INCH VCP SEWER LINE
- SUMP

NOTES:

- RWOCER INFORMED BP THAT CRIMSON PIPELINE OWNS ONE ACTIVE CRUDE AND ONE INACTIVE CRUDE PIPELINES THAT RUN BENEATH BAKER STREET NEAR THE NORTHEAST CORNER OF THE COI SOUTHERN PROPERTY. THESE LINES ARE NOT DEPICTED ON THIS DRAWING.
- PIPELINE INFORMATION SOURCES: CITY OF LONG BEACH AND ARC RECORDS.

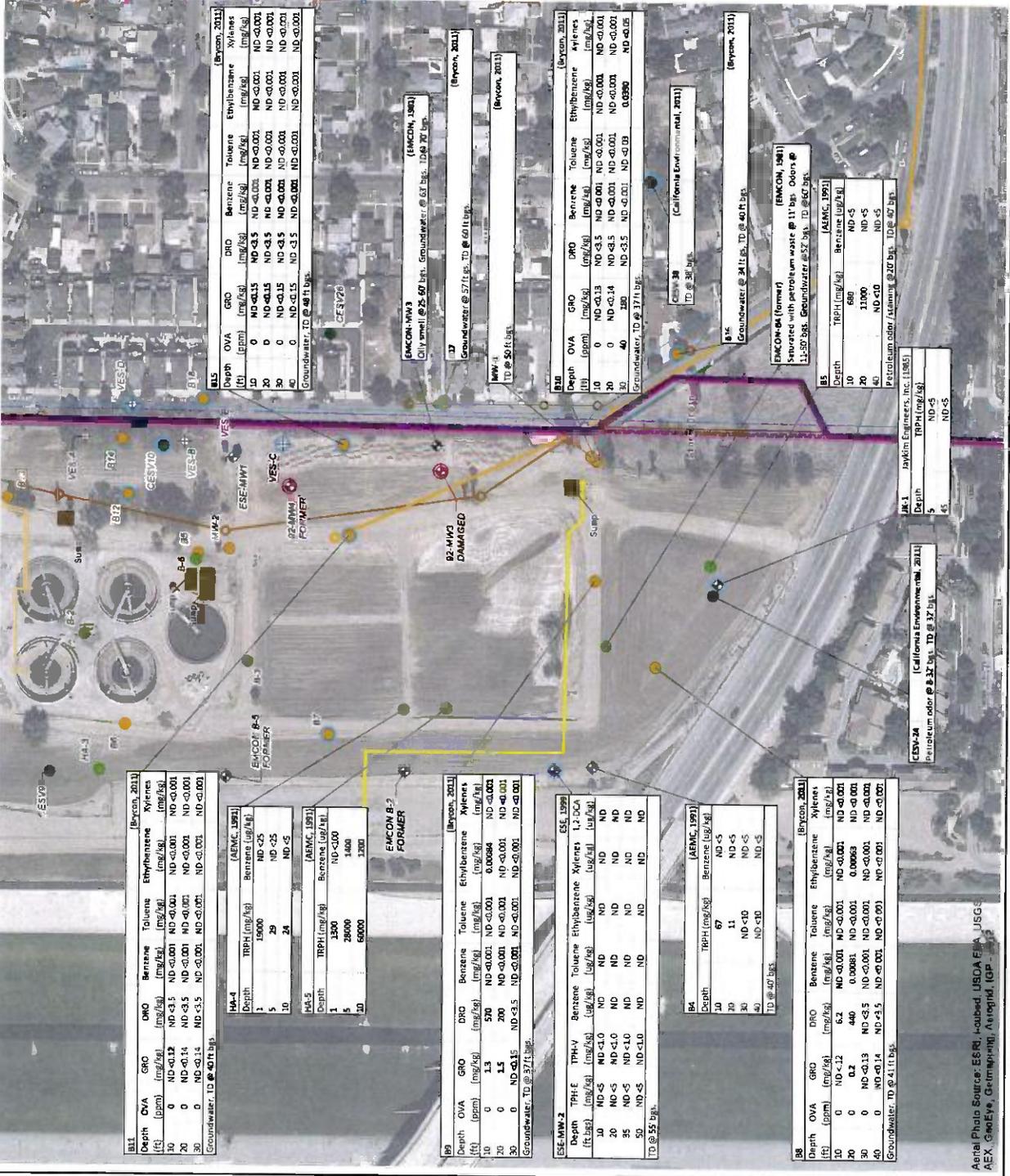
ABBREVIATIONS:

- BGS BELOW GROUND SURFACE
- DETEL DIESEL-RANGE ORGANICS
- FPC FERTILIZER
- GRD GASOLINE-RANGE ORGANICS
- MCAG METALS PER KILOGRAM
- ND NOT DETECTED
- NDV NOT DETERMINED
- REQUAL REGIONAL WATER QUALITY CONTROL BOARD
- TD TOTAL DEPTH
- TPH TOTAL PETROLEUM HYDROCARBONS - EXTRACTIBLE
- TPPH TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
- USPG MICROGRAMS PER KILOGRAM
- USPP MICROGRAMS PER POUND
- VCP VITRIFIED CLAY PIPE

**NEAR 712 BAKER STREET
LONG BEACH, CALIFORNIA**

**FOCUSED SOIL DATA SUMMARY
SOUTHERN GOLDEN AVENUE
CORRIDOR**

PROJECT NO. DRAWN: CID DATE: 2020122420 SW MW 11/19/12 **FIGURE 3c**





Legend:

- HISTORICAL GROUNDWATER MONITORING WELL LOCATION
- VAPOR EXTRACTION SYSTEM WELL (CALIFORNIA ENVIRONMENTAL, 2012)
- OOI WELLSBORINGS (BPCON 2010/2011)
- OOI SOIL VAPOR PROBE (CALIFORNIA ENVIRONMENTAL, 2011)
- SOIL BORING (AEMC, 1987)
- MANHOLE
- NO SOIL IMPACTS DOCUMENTED IN BORING LOG AT THIS LOCATION
- 1,2-DCA DETECTED IN GROUNDWATER
- LOCATION OF PREVENTATIVE MAINTENANCE ON BP LINE 32 AT 4PT AND 37ST SOUTH OF BAKER STREET
- 12-INCH BP (USPL) 32 PIPELINE
- 12-INCH BP (USPL) 32 PIPELINE (ABANDONED)
- 8-INCH BP (USPL) 34 PIPELINE
- 8-INCH BP (USPL) 34 PIPELINE (ABANDONED)
- 6-INCH BP (USPL) 252 PIPELINE (ABANDONED)
- 6-INCH PLAINS PIPELINE
- 6-INCH PLAINS PIPELINE (ABANDONED)
- 4-INCH GENERAL EXPLORATION PIPELINE (ABANDONED)
- 8-INCH GETTY PIPELINE
- 8-INCH GETTY PIPELINE (ABANDONED)
- 8-INCH GOLDEN EAGLE PIPELINE
- 8-INCH GOLDEN EAGLE PIPELINE (ABANDONED)
- APPROXIMATE STORM PIPING
- 10-INCH UNION OIL PIPELINE
- 6-INCH UNION OIL PIPELINE (ABANDONED)
- 30-INCH WATER PIPELINE
- WATER PIPELINE (ABANDONED)
- 12-INCH OOI WASTEWATER PIPELINE
- 24-INCH OOI WASTEWATER PIPELINE
- 24-INCH OOI "STORM" PIPELINE
- 30-INCH VCP L.A. COUNTY SEWER LINE (APPROXIMATE)
- 6 TO 8-INCH VCP SEWER LINE
- SUMP
- LARWOODS AREA OF CONCERN

VES-A Soil Vapor

- Forensics indicates unrefined source
- Cyclics (not branched)
- Lacks triplet of gasoline
- Lacks iso-octane additive
- Similar in composition to CESV-7 and CESV-2

Chemical fingerprint data do not show a consistent forensic signature site wide. A simple gasoline signature would be evident if a pipeline released gasoline.

CESV-33 Soil Vapor

- Shallow benzene 5-10' bgs.
- Benzene ~400X higher at 20' bgs.

No 1,2-DCA detected above 30' bgs at any location in soil or soil vapor.

1,2-DCA is not a component of diesel, crude oil, or dark refined product, the products that Lines 32 and 34 carried.

MW-1 Product

- Product "weathered gasoline," per OOI.
- Measured for first time in 2012, coincident with groundwater flow to Southeast.

AOC-B Soil and Soil Vapor

- No benzene no shallow impacts in soil or soil vapor.

OOI Property Shallow Methane

Shallow methane above 100 volumetric ppmv on only OOI property, suggesting a significant source of shallow hydrocarbon contamination on the OOI site.

No basis for BP line release.

- Asphalt patches not indicative of leak repairs
- No records of leaks from BP lines along Golden Avenue.
- No evidence of top-down release; considerable evidence of bottom-up movement of vapors.
- Former BP Line 252 is the only BP line documented to have carried gasoline 55+ years ago and is not a viable source of iso-octane or n-alkanes in AOC-B.
- No shallow soil impacts documented along Golden Avenue.
- Line 34 carried diesel, Line 32 carried crude oil and dark refined product, and neither are sources of gasoline-type hydrocarbon or benzene contamination based on records reviewed.

OOI operated for 70 years and treated the following:

- Production waters/ brine,
- Gas condensate
- Refinery waste,
- Influent containing high benzene and 1,2-DCA.

Additional variables to consider:

- Groundwater flow direction highly variable.
- Lack of information on surrounding pipelines and waste lines.
- Data do not establish a "track of shallow ... benzene" or a "maximum concentration of benzene beneath BP pipelines" as asserted in November 6, 2012 letter from the LARWQCB.

NOTES:

- 1) RWQCB INFORMED BP THAT CRIMSON PIPELINE OWNS ONE ACTIVE CRUDE AND ONE INACTIVE CRUDE PIPELINES THAT RUN BENEATH BAKER STREET NEAR THE NORTHEAST CORNER OF OOI SOIL PROPERTY. THESE LINES ARE NOT DEPICTED ON THIS DRAWING.
- 2) PIPELINE INFORMATION SOURCES: CITY OF LONG BEACH AND ARC RECORDS
- 3) 1953 DRAWING IDENTIFIES 13 BASINS ON THE OOI PROPERTY

ABBREVIATIONS:

- AOC AREA OF CONCERN
- BP BAKER BEACH PROPERTY
- 1,2-DCA 1,2-DICHLOROBENZENE
- FT OR FEET
- LARWOODS REGIONAL WATER QUALITY CONTROL BOARD
- OOI OIL OPERATORS INC
- VCP VITRIFIED CLAY PIPE
- WWTP WASTEWATER TREATMENT PLANT
- USPL BP-US PIPELINES & LOGISTICS

SUMMARY OF FINDINGS

NEAR 712 BAKER STREET
LONG BEACH, CALIFORNIA

PROJECT NO. DRWN. C-CD. DATE. FIGURE 5
820815-208 SM REV. 1/10/12



Aerial Photo Source: ESRI, courtesy USGS FSA, USGS
AEX, GeoEye
Mapping, Aerial, VGP 2007